

Hodgkin Lymphoma

90 questions in three levels, with answer key

For NEET-PG, USMLE, DNB and DM revision and for classroom tests. Level 1 covers core facts; Level 2 tests applied reasoning (calculations, imaging and fluid findings, trial interpretation, sequencing); Level 3 covers landmark trials and newer therapies. Answers and explanations are at the end. No drug doses.

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Level 1 · Basics

- Q1. Diagnosis** Which lymph node region is most often enlarged when classic Hodgkin lymphoma (cHL) presents?
- A Epitrochlear or brachial nodes
 - B Cervical or supraclavicular nodes
 - C Inguinal or femoral nodes
 - D Mesenteric or coeliac nodes
 - E Popliteal or tibial nodes
- Q2. Diagnosis** Which of the following counts as a "B symptom" in Hodgkin lymphoma?
- A Generalised itching
 - B Fatigue
 - C Pain in the nodes after drinking alcohol
 - D Loss of appetite without weight loss
 - E Drenching night sweats
- Q3. Diagnosis** A 23-year-old notices that a neck lump aches within minutes of drinking alcohol. Which statement is correct?
- A It is the commonest presenting symptom of Hodgkin lymphoma
 - B It is a B symptom and upstages the disease
 - C It indicates bone marrow involvement
 - D It is typical of tuberculous lymphadenitis
 - E It is uncommon but highly specific for classic HL
- Q4. Diagnosis** Which lymph node is most likely to need a biopsy rather than watching?
- A A painless, rubbery 3 cm supraclavicular node present for 6 weeks
 - B A soft 0.8 cm occipital node in a child with scalp lice
 - C A node that shrank completely within 2 weeks of a dental infection
 - D A 1 cm inguinal node in a barefoot farmer
 - E A tender 1 cm neck node during a sore throat
- Q5. Diagnosis** What is the preferred way to diagnose suspected Hodgkin lymphoma in an enlarged neck node?
- A A trial of anti-tuberculosis treatment
 - B Excision (or incision) biopsy of the node
 - C Serum LDH and ESR
 - D Fine-needle aspiration cytology alone
 - E Ultrasound features alone
- Q6. Diagnosis** This schematic H&E section from an excised neck node shows the large cell marked in the centre. What is it?
- A A Langhans giant cell
 - B A plasma cell
 - C A lymphocyte-predominant ("popcorn") cell
 - D A Reed-Sternberg cell
 - E A megakaryocyte
- Q7. Diagnosis** Which immunophenotype is typical of Hodgkin/Reed-Sternberg (HRS) cells in classic HL?
- A CD20 strongly positive, CD45 positive, CD30 negative
 - B CD30 positive, CD15 positive, CD45 negative
 - C CD3 positive, CD30 positive, ALK positive
 - D CD34 and CD117 positive
 - E CD19, CD5 and CD23 positive
- Q8. Diagnosis** In the Indian OncoCollect registry of 939 patients, which subtype of classic HL was commonest?
- A Lymphocyte-depleted
 - B Nodular sclerosis
 - C Lymphocyte-rich
 - D Mixed cellularity
 - E Nodular lymphocyte-predominant

- Q9. Diagnosis** Which virus is most closely linked with classic Hodgkin lymphoma?
- A Human herpesvirus 8
 - B HTLV-1
 - C Epstein-Barr virus
 - D Hepatitis B virus
 - E Human papillomavirus
- Q10. Diagnosis** Which staging system is used for Hodgkin lymphoma?
- A Durie-Salmon staging
 - B Lugano classification
 - C FIGO surgical staging
 - D Rai and Binet staging
 - E TNM (tumour, node, metastasis)
- Q11. Diagnosis** PET-CT shows involved cervical and para-aortic nodes, no organ involvement and no B symptoms. What is the Lugano stage?
- A IIAE
 - B IVA
 - C IIA
 - D IA
 - E IIIA
- Q12. Diagnosis** This schematic chest X-ray is from a 24-year-old with cough. The anterior mediastinal mass is wider than one-third of the thoracic diameter. How is this recorded?
- A As an E lesion (extranodal extension)
 - B As advanced stage, whatever the node sites
 - C As bulky mediastinal disease
 - D As the equivalent of a B symptom
 - E As stage IV disease because of the mass
- Q13. Diagnosis** When is a bone marrow biopsy needed in staging classic HL?
- A In every patient at diagnosis
 - B Instead of PET-CT when PET is available
 - C Whenever there are B symptoms
 - D Only in stage I disease
 - E Only for unexplained low blood counts
- Q14. Diagnosis** An interim PET after two cycles shows residual uptake above the mediastinal blood pool but not above the liver. What is the Deauville score and its meaning?
- A Score 3: complete metabolic response
 - B Score X: lymphoma at a new site
 - C Score 2: progressive disease
 - D Score 5: refractory disease
 - E Score 4: partial response
- Q15. Treatment** What does ABVD stand for?
- A Doxorubicin (Adriamycin), bleomycin, vinblastine, dacarbazine
 - B Asparaginase, bleomycin, vinorelbine, docetaxel
 - C Actinomycin, bleomycin, vincristine, dacarbazine
 - D Doxorubicin, bendamustine, vincristine, dexamethasone
 - E Doxorubicin, busulfan, vinblastine, dexamethasone
- Q16. Treatment** Which pair of baseline tests is needed before starting ABVD?
- A Bone marrow biopsy and lumbar puncture
 - B Audiometry and nerve conduction studies
 - C Ophthalmology review and urine protein
 - D Thyroid function and cortisol
 - E Echocardiogram and lung function with DLCO

- Q17. Treatment** In the S1826 trial, which regimen became the preferred first-line treatment for stage III–IV classic HL?
- A Escalated BEACOPP
 - B Brentuximab vedotin alone
 - C ABVD for 8 cycles
 - D R-CHOP
 - E Nivolumab plus AVD (N-AVD)
- Q18. Treatment** Which drug targets CD30 on Hodgkin/Reed–Sternberg cells?
- A Nivolumab
 - B Daratumumab
 - C Polatuzumab vedotin
 - D Brentuximab vedotin
 - E Rituximab
- Q19. Treatment** Why are PD-1 inhibitors such as nivolumab so active in classic HL?
- A A BCR-ABL fusion in HRS cells
 - B HER2 amplification
 - C 9p24.1 gain raises PD-L1 and PD-L2
 - D Activating EGFR mutations
 - E Strong CD20 expression on HRS cells
- Q20. Treatment** Which radiotherapy approach is used for Hodgkin lymphoma today?
- A Involved-site RT, usually 20–30 Gy
 - B Extended-field RT with routine splenectomy
 - C Total body irradiation
 - D Whole-abdomen RT after staging laparotomy
 - E Mantle-field RT to 40–44 Gy
- Q21. Treatment** During PET-adapted treatment of early-stage cHL, what guides the decision to de-escalate (drop RT or bleomycin) or escalate?
- A The ESR after two cycles
 - B Whether the patient still has night sweats
 - C The LDH level
 - D Node size on clinical examination
 - E The PET scan after two cycles (Deauville score)
- Q22. Treatment** In which patient is bleomycin best avoided?
- A A 68-year-old smoker with a DLCO of 55%
 - B A 35-year-old with a negative interim PET who has had only one cycle
 - C A 19-year-old athlete
 - D A 25-year-old with normal lung function
 - E A 30-year-old with stage IA disease
- Q23. Treatment** A patient on ABVD has a neutrophil count of $0.8 \times 10^9/L$ on the day of cycle 2 but is well and afebrile. What is the usual practice?
- A Delay the cycle until neutrophils recover
 - B Give ABVD on time at full dose
 - C Reduce all doses by 25%
 - D Switch to escalated BEACOPP
 - E Start routine G-CSF for all remaining cycles
- Q24. Treatment** Which drug is part of treatment for nodular lymphocyte-predominant HL (NLPHL) but not for classic HL?
- A Dacarbazine
 - B Rituximab
 - C Brentuximab vedotin
 - D Nivolumab
 - E Bleomycin

- Q25. Treatment** What is the curative standard for a fit patient whose classic HL relapses after first-line chemotherapy?
- A Salvage, then autologous stem cell transplant
 - B Radiotherapy alone to all sites
 - C Repeat the same first-line regimen
 - D Palliative care, as cure is no longer possible
 - E Allogeneic transplant as the first step
- Q26. Survivorship** What is the leading cause of death in long-term survivors of Hodgkin lymphoma?
- A Infection
 - B Late relapse of Hodgkin lymphoma after 20 years
 - C Second cancers
 - D Kidney failure
 - E Liver failure
- Q27. Survivorship** Which blood test should be done every year after radiotherapy to the neck?
- A Serum ferritin
 - B Prostate-specific antigen
 - C TSH (thyroid function)
 - D CA-125
 - E Serum calcium
- Q28. Survivorship** A woman had chest radiotherapy for HL at age 18. When should breast screening start?
- A Only if there is a family history of breast cancer
 - B From 25, or 8 years after RT, whichever is later
 - C At age 40, with breast ultrasound only
 - D At age 50, as for the general population
 - E Never: modern radiotherapy fields are small
- Q29. Survivorship** A patient is in complete remission 18 months after treatment and feels well. Which follow-up is recommended?
- A No follow-up is needed
 - B Bone marrow biopsy every year
 - C Clinical review and blood tests; scans only for symptoms
 - D CT of chest, abdomen and pelvis every 6 months for 5 years
 - E PET-CT every 3 months
- Q30. Survivorship** A 24-year-old man asks about fertility before ABVD. What is the best advice?
- A Fertility is not affected by any Hodgkin treatment, so banking is unnecessary
 - B He must avoid fathering children for 20 years
 - C ABVD rarely causes infertility; bank sperm anyway
 - D ABVD always causes permanent infertility
 - E Only radiotherapy affects fertility

Level 2 · Applied & innovative

- Q31. Diagnosis** A 50-year-old man has stage IV cHL. Albumin 3.6 g/dL, Hb 11.0 g/dL, WBC 16,000/ μ L, lymphocytes 900/ μ L. What is his International Prognostic Score (IPS)?
- A 4
 - B 5
 - C 6
 - D 7
 - E 3
- Q32. Treatment** A 26-year-old woman has stage IIA cHL in three nodal regions above the diaphragm, ESR 22, no bulk. PET2 after two ABVD is Deauville 2. Is "2 ABVD + 20 Gy and stop" appropriate?
- A Yes: her ESR is under 50 and there is no bulk
 - B No: three regions make her GHSG-unfavourable
 - C Yes: any PET2-negative early-stage patient qualifies
 - D No: she needs an autologous transplant
 - E No: PET2-negative patients need escalated BEACOPP

Q33. Diagnosis A 30-year-old has left cervical and mediastinal nodes, and the mediastinal mass invades the adjacent sternum. No other organs are involved and there are no B symptoms. What is the stage?

- A IIA
- B IIAE
- C IAE
- D IIIA
- E IVA

Q34. Treatment This schematic interim PET is from a 29-year-old with early favourable cHL after two cycles of ABVD. A single mediastinal site is moderately hotter than the liver. What next?

- A Switch to nivolumab alone
- B Stop treatment: this is a complete metabolic response
- C Two more cycles of ABVD, then repeat PET (PET4)
- D 20 Gy involved-site RT and stop
- E Immediate autologous transplant

Q35. Diagnosis A 22-year-old took anti-TB treatment for 3 months for a neck node after FNAC reported "granulomatous lymphadenitis". The node is now 4 cm and he has night sweats. What next?

- A Repeat FNAC from a different part of the node
- B Add second-line anti-TB drugs for possible resistance
- C Start ABVD on clinical grounds without a biopsy
- D Excision biopsy of the node (histology and TB tests)
- E Extend anti-TB treatment to nine months in total

Q36. Diagnosis A 19-year-old has a 12 cm anterior mediastinal mass and no enlarged peripheral nodes. Which is the best route to a diagnosis?

- A Bone marrow biopsy to avoid surgery
- B Endobronchial (bronchoscopic) needle biopsy
- C Start treatment based on the CT appearance alone
- D CT-guided fine-needle aspiration of the mass
- E Mediastinoscopy, mediastinotomy or VATS biopsy

Q37. Diagnosis This schematic immunostain of a node biopsy shows large cells with membrane staining and a dot of staining near the nucleus. Which marker is this, and which drug targets it?

- A CD20; rituximab
- B CD38; daratumumab
- C CD30; brentuximab vedotin
- D CD79b; polatuzumab vedotin
- E PD-1; nivolumab

Q38. Diagnosis This schematic PET image shows abnormal uptake in the left neck, the mediastinum and diffusely in the spleen. What is the stage?

- A Stage III: spleen counts as nodal tissue
- B Stage II
- C Stage I
- D Stage IIE
- E Stage IV: the spleen is an extranodal organ

Q39. Diagnosis A 40-year-old man has EBER-positive mixed cellularity cHL with weight loss and non-contiguous spread to the liver and marrow. Which test is most important to add?

- A Anti-nuclear antibodies
- B Serum ACE
- C Serum IgG4
- D HIV test
- E JAK2 mutation

Q40. Treatment In H10F (early favourable, PET2-negative), combined modality therapy gave 10-year PFS 98.8% vs 85.4% with chemotherapy alone, and overall survival 100% vs 98%. What is the correct interpretation?

- A RT prevents relapses without a proven survival gain
- B PFS and OS are both equivalent between the arms
- C Radiotherapy improves overall survival by 2%
- D Chemotherapy alone is unsafe and should be abandoned
- E Radiotherapy should be given only if PET2 is positive

Q41. Treatment In S1826, 2-year PFS was 92% with N-AVD and 83% with BV-AVD. Approximately how many patients must be treated with N-AVD instead of BV-AVD to prevent one progression or death at 2 years?

- A 2
- B 9
- C 45
- D 11
- E 83

Q42. Treatment A 45-year-old with stage IIIB cHL has rheumatoid arthritis that needs methotrexate. Which first-line regimen fits best?

- A BV-AVD with G-CSF
- B N-AVD
- C R-CHOP
- D Nivolumab alone
- E ABVD × 2 then 20 Gy

Q43. Treatment A fit 68-year-old with stage IVB cHL and no autoimmune disease asks about treatment. Which plan is preferred?

- A BV-AVD given together for 6 cycles
- B Escalated BEACOPP
- C ABVD for 6 cycles
- D Radiotherapy alone
- E N-AVD, without bleomycin

Q44. Treatment A 32-year-old with stage IIIA cHL is treated with ABVD because immunotherapy is unaffordable. PET2 is Deauville 2. What next (RATHL approach)?

- A Stop treatment after 2 cycles
- B ABVD for 4 more cycles
- C Escalated BEACOPP
- D AVD for 4 more cycles (drop bleomycin)
- E Consolidation radiotherapy to all sites

Q45. Treatment A 27-year-old with stage IIIB cHL had a 9 cm nodal mass at diagnosis and is in complete metabolic response after chemotherapy. Is consolidation radiotherapy to the former bulky site needed?

- A Only if the mass was in the abdomen
- B No: no benefit after a complete response
- C Only if the ESR was high at diagnosis
- D Yes, but at a reduced dose of 20 Gy
- E Yes: all masses over 5 cm need 30 Gy

Q46. Treatment A 22-year-old woman has early-stage cHL in the mediastinum and both axillae; PET2 is negative. Which approach do most experts favour?

- A Chemotherapy only
- B Observation after two cycles
- C Mantle-field radiotherapy
- D Involved-site RT to all three sites
- E Escalated BEACOPP

- Q47. Treatment** A district hospital cannot arrange interim PET. A 30-year-old has early favourable (non-GHSG-favourable) cHL. What is the recommended plan?
- A ABVD × 2 then 20 Gy
 - B Radiotherapy alone
 - C AVD × 2 alone
 - D ABVD × 3 then 30 Gy ISRT
 - E ABVD × 2 alone
- Q48. Treatment** A fit 35-year-old has stage IIB cHL with a large mediastinal mass and an extranodal lesion, and wants the shortest effective treatment. Which regimen was tested in exactly this group?
- A R-CHOP × 6
 - B Brentuximab vedotin alone
 - C ABVD × 2 + 20 Gy
 - D AVD × 2
 - E BrECADD (HD21)
- Q49. Treatment** A 28-year-old relapses 8 months after completing ABVD-AVD for stage IIIB cHL. PET shows new nodes. What is the first step?
- A Start nivolumab alone immediately
 - B Radiotherapy to the new nodes
 - C Biopsy to confirm the relapse
 - D Repeat ABVD
 - E Proceed straight to autologous transplant
- Q50. Treatment** Which patient should be offered brentuximab vedotin maintenance after autologous transplant?
- A A patient with a first relapse 3 years after treatment, in complete response, with no other risk factor
 - B A BV-naïve patient with primary refractory disease
 - C Every patient after transplant
 - D A patient who progressed while on BV
 - E A patient with severe BV neuropathy
- Q51. Treatment** Six weeks into nivolumab-based salvage, a well patient's PET shows larger, avid nodes. What is the best course?
- A Start high-dose steroids
 - B Suspect a flare; re-image or biopsy first
 - C Proceed to allogeneic transplant
 - D Stop nivolumab at once and declare refractory disease
 - E Add radiotherapy to all sites
- Q52. Treatment** A 33-year-old has stage IA NLP HL in a single cervical node (LP-IPS O). What is the usual treatment for an adult?
- A Observation after FNAC alone
 - B R-CHOP × 6
 - C ABVD × 6
 - D Autologous transplant
 - E Involved-site radiotherapy
- Q53. Treatment** A 26-year-old is 12 weeks pregnant with asymptomatic, non-bulky stage IIA cHL. What is the usual plan?
- A Escalated BEACOPP after delivery only
 - B Termination of pregnancy in every case
 - C Mediastinal radiotherapy with abdominal shielding
 - D Watch, then ABVD in the second trimester
 - E Immediate ABVD in the first trimester

- Q54. Treatment** How should cHL be staged in a pregnant woman?
- A MRI and ultrasound; PET after delivery
 - B Gallium scintigraphy of the whole body
 - C PET-CT as in non-pregnant patients
 - D Staging laparotomy with splenectomy
 - E No staging until after delivery
- Q55. Treatment** A 14-year-old has stage IIIB cHL. Which first-line regimen is suggested?
- A Radiotherapy alone
 - B N-AVD
 - C R-CHOP
 - D ABVD × 2 + 20 Gy
 - E Escalated BEACOPP
- Q56. Survivorship** Why is a yearly blood count advised for years after treatment of Hodgkin lymphoma?
- A To detect therapy-related myeloid neoplasms
 - B To monitor bleomycin lung injury
 - C Because ABVD causes lifelong neutropenia
 - D To screen for late thyroid disease
 - E To detect breast cancer early
- Q57. Survivorship** In a Dutch case-control study, how did the risk of valve disease change with radiation dose to the heart valves?
- A It was the same at every dose level
 - B It fell as the valve dose increased
 - C It appeared only within two years of treatment
 - D It rose steeply above 30 Gy (11.8-fold at ≥40 Gy)
 - E It rose only in those who also had anthracyclines
- Q58. Survivorship** In a British Columbia cohort, the risk of relapse within 5 years was 18% at diagnosis. What was the risk of later relapse for patients still relapse-free at 2 years?
- A About 30%
 - B About 6%
 - C About 18%
 - D About 50%
 - E Zero
- Q59. Survivorship** A 40-year-old woman had mantle-field radiotherapy at 18 and has never had breast screening. What should be arranged?
- A Ultrasound every 5 years
 - B Mammography from age 50
 - C Yearly mammography, considering MRI too
 - D No screening, because the treatment was long ago
 - E Breast self-examination only
- Q60. Diagnosis** In a prospective Indian study of 396 children with Hodgkin lymphoma, about what proportion had received anti-TB treatment before the diagnosis?
- A None
 - B About 3 in 10
 - C About 1 in 100
 - D About 7 in 10
 - E About 1 in 20

Level 3 • Challenging

- Q61. Treatment** Which statement about the S1826 trial is correct?
- A G-CSF was mandatory in the N-AVD arm only
 - B It compared N-AVD with ABVD in early-stage disease
 - C It excluded patients over 60 years of age
 - D Age 12+, stage III–IV, N-AVD vs BV-AVD; RT in 7 of 970
 - E It showed a large overall survival benefit at 2 years
- Q62. Treatment** What was notable about ECHELON-1?
- A It was PET-adapted, with bleomycin dropped after PET2
 - B BV-AVD caused less neuropathy than ABVD
 - C It showed no difference in progression-free survival
 - D It was limited to stage II disease with bulk
 - E BV-AVD improved OS over ABVD, but not over age 60
- Q63. Treatment** Which statement about HD21 is correct?
- A It compared BrECADD directly with N-AVD
 - B Consolidation RT was given to every patient
 - C BrECADD: better PFS and fewer severe AEs than escBEACOPP
 - D BrECADD caused less febrile neutropenia than ABVD
 - E It enrolled patients up to 75 years of age
- Q64. Treatment** In H10U (early unfavourable, PET2-negative), what did omitting radiotherapy show at 10 years?
- A Relapses were mostly at new, distant sites
 - B PFS was better without radiotherapy
 - C Overall survival was 10% worse without RT
 - D Same OS; lower PFS; relapses mostly at original sites
 - E The trial closed for excess toxicity of RT
- Q65. Treatment** In HD16 (GHSG favourable, PET2-negative after 2 ABVD), what was the effect of omitting 20 Gy?
- A The trial showed RT was harmful
 - B PFS improved without radiotherapy
 - C PFS fell (93% to 86%); OS unchanged
 - D There was no difference in PFS
 - E Overall survival fell from 98% to 86%
- Q66. Treatment** What did CALGB 50801 show in bulky early-stage cHL?
- A ABVD × 6 without RT after negative PET2: 3-yr PFS 93%
 - B PET2-positive patients did best with radiotherapy alone
 - C Bulky disease always needs 30 Gy
 - D The bulky mass predicted relapse regardless of PET2
 - E BV-AVD was superior to ABVD
- Q67. Treatment** In the E2496 trial, what happened to patients aged 60 or over treated with ABVD?
- A Outcomes matched those of younger patients
 - B Neuropathy was the only serious toxicity
 - C No bleomycin lung toxicity was seen at all
 - D Treatment deaths 9%; bleomycin lung toxicity 43%
 - E Nearly all achieved 10-year survival
- Q68. Treatment** In the S1826 subgroup aged 60 and over, how did N-AVD compare with BV-AVD?
- A BV-AVD was better tolerated and more effective
 - B 2-yr PFS 89% vs 64%; OS 96% vs 85%
 - C Older patients were excluded
 - D N-AVD caused more neuropathy
 - E No difference in progression-free survival

- Q69. Treatment** What did the phase 2 study of sequential BV → AVD → BV in patients aged 60 and over report?
- A Complete responses in under 20% of patients
 - B 2-year PFS of only about 40%
 - C Excess treatment deaths, halting the study
 - D No neuropathy at all, so BV is safe
 - E 2-yr PFS 84%; about half completed therapy
- Q70. Treatment** In a multicentre study of 936 transplanted patients, what was the 2-year PFS after autologous transplant according to the salvage regimen?
- A About 50% after every regimen
 - B Under 20% after checkpoint-based salvage
 - C Best after platinum chemotherapy (80%)
 - D Best after BV alone (80%)
 - E Best after checkpoint-based salvage (about 80%)
- Q71. Treatment** Which statement about the AETHERA trial is correct?
- A Better PFS (59% vs 41%), no OS difference
 - B It enrolled patients already treated with BV
 - C It included low-risk patients only
 - D It showed an overall survival benefit
 - E It tested nivolumab rather than BV maintenance
- Q72. Treatment** What did the GHSG/EBMT randomised trial of transplant in chemosensitive relapsed HL show?
- A There was no difference in any end point
 - B Allogeneic transplant was superior
 - C Better freedom from failure, same OS
 - D Conventional chemotherapy was better
 - E Transplant improved overall survival by 30%
- Q73. Treatment** Which complications are more frequent when allogeneic transplant follows PD-1 blockade?
- A Higher relapse with no change in toxicity
 - B Secondary AML within months of transplant
 - C None: PD-1 blockade protects against GVHD
 - D GVHD (including hyperacute), VOD, febrile syndrome
 - E Graft failure, but no change in GVHD
- Q74. Treatment** A pre-transplant prognostic model gives 1 point for Karnofsky <90, 1 for chemoresistant disease, 2 for more than three prior regimens and 2 for extranodal disease. A patient has chemoresistant disease with extranodal spread, Karnofsky 90, two prior regimens. What is the risk group?
- A Low (score 0)
 - B Low (score 1)
 - C High (score 6)
 - D High (score 4–6)
 - E Intermediate (score 3)
- Q75. Treatment** A patient stopped nivolumab after a year in complete response and relapses 10 months later. What do retrospective data suggest about re-treatment with the same PD-1 inhibitor?
- A Re-treatment causes fatal GVHD
 - B The drug must be switched to a CD20 antibody
 - C Responses similar to the first course
 - D PD-1 re-treatment never works
 - E Only allogeneic transplant can help
- Q76. Diagnosis** Loss-of-function mutations in B2M, found in about 70% of cHL, have which effect?
- A Regained expression of CD20 and CD19
 - B Amplification of the PD-L1 gene locus
 - C Constant activation of B-cell receptor signalling
 - D Loss of MHC class I antigen presentation
 - E Overexpression of CD30 on the cell surface

- Q77. Diagnosis** A node biopsy shows large atypical cells that are strongly CD30-positive, CD15-negative, PAX5-negative and positive for CD4 and perforin. What is the most likely diagnosis?
- A Classic Hodgkin lymphoma
 - B T-cell/histiocyte-rich large B-cell lymphoma
 - C Anaplastic large cell lymphoma
 - D Primary mediastinal B-cell lymphoma
 - E NLPHL
- Q78. Diagnosis** A young man has a large anterior mediastinal mass. The tumour cells express CD15 and strong CD30 but also strong CD20, CD79a and PAX5. What is the likely diagnosis and its significance?
- A Nodular lymphocyte-predominant HL
 - B Classic HL, nodular sclerosis subtype
 - C Mediastinal grey-zone lymphoma
 - D Thymoma with lymphoid stroma
 - E Mediastinal seminoma
- Q79. Diagnosis** This schematic H&E shows a large cell with a folded, lobulated nucleus inside a nodule of small lymphocytes. Immunostains: CD20+, CD45+, CD30-, CD15-. Which finding on the excised node best separates this from T-cell/histiocyte-rich large B-cell lymphoma (THRLBCL)?
- A Nodular pattern with an FDC meshwork (CD21/CD23)
 - B Positive EBER in the large cells
 - C Absence of CD30 and CD15 staining
 - D Presence of large atypical cells in sheets
 - E CD20 positivity of the large cells
- Q80. Treatment** A 50-year-old has NLPHL, stage IIIA, Hb 11 g/dL, with splenic involvement and no B symptoms. What is the LP-IPS and the usual approach if treatment is needed?
- A LP-IPS 4: autologous transplant
 - B LP-IPS 0: observation only
 - C LP-IPS 2: ABVD-based chemotherapy
 - D LP-IPS 3: higher risk; chemoimmunotherapy
 - E LP-IPS 1: radiotherapy alone
- Q81. Treatment** Nine years after treatment for NLPHL, a patient develops B symptoms, splenomegaly and bone marrow involvement. What is the priority?
- A Biopsy for transformation (e.g. THRLBCL)
 - B Radiotherapy to the spleen
 - C Start ABVD
 - D Assume an NLPHL relapse and give rituximab alone
 - E Observation
- Q82. Treatment** In the GLOW analysis of completely excised stage IA NLPHL, how did radiotherapy compare with active surveillance?
- A Surveillance gave better progression-free survival
 - B Radiotherapy caused excess deaths
 - C No relapses occurred with surveillance
 - D Radiotherapy improved overall survival by 20%
 - E 6-yr PFS 90.5% vs 65.5%; OS not different
- Q83. Treatment** In paediatric low-risk cHL treated with two cycles of OEPA, what happens after a complete response?
- A Radiotherapy to all initial sites
 - B No further treatment and no RT
 - C Four more cycles of OEPA
 - D Escalated BEACOPP
 - E Autologous transplant

- Q84. Treatment** What did AHOD1331 show in high-risk paediatric cHL?
- A Overall survival improved by about 15%
 - B It compared nivolumab with brentuximab
 - C BV reduced radiotherapy use to under 5%
 - D Better 3-year EFS (92% vs 83%), similar safety
 - E BV caused excess treatment-related deaths
- Q85. Treatment** Why is chemotherapy avoided in the 3 weeks before delivery in a pregnant woman with cHL?
- A To avoid low blood counts at birth
 - B To allow PET scanning
 - C Because chemotherapy is ineffective late in pregnancy
 - D Because the placenta blocks drug delivery
 - E Because ABVD triggers labour
- Q86. Survivorship** What did van Nimwegen and colleagues find about heart failure after Hodgkin lymphoma treatment?
- A Heart failure risk rose linearly from 1 Gy
 - B Steep rise at ≥ 25 Gy; anthracyclines about threefold
 - C Heart failure appeared mostly within 2 years
 - D Radiation and anthracyclines multiplied each other's effect
 - E Anthracyclines had no effect on heart failure
- Q87. Survivorship** Which statement about breast cancer after Hodgkin lymphoma is correct?
- A Doxorubicin raises risk independently of chest RT
 - B Risk is limited to women treated after 40
 - C ABVD lowers breast cancer risk
 - D Risk returns to normal after 10 years
 - E Only radiotherapy affects breast cancer risk
- Q88. Survivorship** In the GHSG HD7–HD12 analysis, what was the cumulative incidence of relapse at 10, 15 and 20 years?
- A 2.5% at 10 years and none after that
 - B 0% after 5 years
 - C 20%, 30% and 40%
 - D 10% at every time point
 - E 2.5%, 4.3% and 6.9%
- Q89. Survivorship** In a Dutch cohort of women treated for HL between 15 and 40, what was the rate of premature ovarian failure with and without alkylating chemotherapy?
- A Zero in both groups
 - B About 3% vs 60% (the reverse)
 - C About 30% in both groups
 - D About 90% vs 50%
 - E About 60% vs 3%
- Q90. Survivorship** In the large early-stage cohort cited in the survivorship review, when did deaths from causes other than HL overtake deaths from HL?
- A Within the first year after diagnosis
 - B Never
 - C At about 2 years, when most relapses occur
 - D About 8 years after diagnosis
 - E After 40 years

Answer key

1-B 2-E 3-E 4-A 5-B 6-D 7-B 8-D 9-C 10-B 11-E 12-C 13-E 14-A 15-A 16-E 17-E 18-D 19-C 20-A 21-E 22-A
23-B 24-B 25-A 26-C 27-C 28-B 29-C 30-C 31-C 32-B 33-B 34-C 35-D 36-E 37-C 38-A 39-D 40-A 41-D
42-A 43-E 44-D 45-B 46-A 47-D 48-E 49-C 50-B 51-B 52-E 53-D 54-A 55-B 56-A 57-D 58-B 59-C
60-B 61-D 62-E 63-C 64-D 65-C 66-A 67-D 68-B 69-E 70-E 71-A 72-C 73-D 74-E 75-C 76-D 77-C 78-C
79-A 80-D 81-A 82-E 83-B 84-D 85-A 86-B 87-A 88-E 89-E 90-D

Explanations

- Q1 · B** Neck or supraclavicular nodes are enlarged in 60–80% of patients; axillary nodes in about 30% and inguinal nodes in about 10%. Disease confined below the diaphragm is uncommon (under 10%).
- Q2 · E** B symptoms are unexplained fever above 38°C, drenching night sweats, and loss of more than 10% of body weight in 6 months. Itch, alcohol-induced pain and fatigue are real clues but are not B symptoms.
- Q3 · E** Alcohol-associated pain occurs in under 10% of patients and has no prognostic weight, but it is very specific for cHL. It is not a B symptom.
- Q4 · A** Persistence beyond about 4 weeks, size over about 2 cm, a firm rubbery feel, growth, and a supraclavicular site all favour biopsy. Tender nodes with an obvious infection that settle within weeks are reactive.
- Q5 · B** Excision gives the architecture and enough tissue for immunostains and subtyping; several core biopsies can suffice when excision is not possible. FNAC cannot make or exclude the diagnosis.
- Q6 · D** The classic Reed–Sternberg cell has two mirror-image nuclei with large eosinophilic nucleoli, set in a mixed background of small lymphocytes, eosinophils and histiocytes. Popcorn cells belong to NLPHL; Langhans cells to granulomas.
- Q7 · B** HRS cells express CD30 (virtually all) and usually CD15 (75–85%), and lack CD45 and CD3. B-cell markers are absent or weak; PAX5 is weakly positive. CD20+, CD45+, CD30– describes the LP cells of NLPHL.
- Q8 · D** Mixed cellularity made up about 61% and nodular sclerosis about 27% of Indian cases, the reverse of the Western pattern (nodular sclerosis about 70%). Mixed cellularity is closely linked with EBV.
- Q9 · C** EBV is found in about 70% of mixed cellularity, over 90% of lymphocyte-depleted and nearly all HIV-associated cHL, and in nearly all cases in tropical regions. The absolute risk of cHL after infectious mononucleosis is only about 1 in 1000.
- Q10 · B** Lugano staging (from Ann Arbor with the Cotswolds modifications) uses PET-CT and records stage I–IV, A or B, the size of any bulky mass and E for limited extranodal extension.
- Q11 · E** Nodal regions on both sides of the diaphragm make it stage III. The spleen also counts as nodal (lymphoid) tissue for staging.
- Q12 · C** A mediastinal mass over one-third of the internal thoracic diameter (or any mass of 10 cm or more) is bulky. In stage I–II it makes the disease unfavourable; it does not by itself change the stage.
- Q13 · E** PET-CT detects marrow involvement well, so routine marrow biopsy has been dropped. Homogeneous marrow uptake on PET is usually reactive.
- Q14 · A** Deauville 1–3 counts as complete metabolic response; 4 (moderately above liver) and 5 (markedly above liver or new lesions) do not.
- Q15 · A** ABVD is the backbone for early-stage cHL. AVD is the same regimen without bleomycin.
- Q16 · E** Doxorubicin needs an adequate ejection fraction (generally 50% or more) and bleomycin a DLCO of generally 60% or more. HBV, HCV and HIV tests and fertility counselling are also done before treatment.
- Q17 · E** N-AVD gave 2-year PFS of 92% vs 83% with BV-AVD, with less toxicity, in patients aged 12 and over.
- Q18 · D** Brentuximab vedotin is an anti-CD30 antibody carrying a microtubule poison. Polatuzumab vedotin targets CD79b, rituximab CD20, nivolumab PD-1 and daratumumab CD38.
- Q19 · C** 9p24.1 gain increases PD-L1, PD-L2 and JAK2. The PD-1 ligands switch off the T cells around the HRS cells; anti-PD-1 antibodies release them.

Q20 · A Small involved-site fields and lower doses replaced the old mantle and extended fields, which caused most of the heart disease and breast cancer seen in long-term survivors.

Q21 · E Interim PET (PET2) is the single most important guide: a negative scan allows de-escalation, a positive scan prompts more treatment or a biopsy.

Q22 · A Bleomycin lung toxicity is commoner and more dangerous in older people, smokers, those with kidney impairment or low DLCO. Over 60, bleomycin is avoided.

Q23 · B ABVD is given on schedule regardless of the neutrophil count, without dose cuts; full dose intensity is achievable without growth factor. G-CSF is reserved for patients who had febrile neutropenia or infection.

Q24 · B NLPHL cells are CD20-positive, so rituximab-based treatment (R-CHOP, R-CVbP, R-B or rituximab alone) is used when systemic therapy is needed.

Q25 · A Salvage to a complete metabolic response followed by autologous transplant cures more than half of relapsed patients. Checkpoint-inhibitor-based salvage gives the most complete responses.

Q26 · C Second cancers lead, and cardiovascular disease is the leading non-cancer cause of death. Most deaths in the first 5–10 years are from relapse.

Q27 · C Thyroid dysfunction develops in 30–60% after neck radiotherapy, mostly within 5 years, so TSH is checked yearly for life.

Q28 · B Women who had chest RT between 10 and 30 years of age have a markedly higher breast cancer risk and are screened early: a yearly mammogram, with MRI considered in addition.

Q29 · C Routine surveillance PET or CT rarely finds relapse before symptoms do and adds radiation. Visits every 3–6 months in years 1–2, then every 6–12 months to year 3, then yearly.

Q30 · C ABVD rarely causes lasting infertility, unlike alkylator-based regimens (BEACOPP-type) and transplant conditioning. Sperm banking is offered because treatment may later need to intensify.

Q31 · C One point each: age over 45, male, stage IV, albumin under 4 g/dL, WBC 15,000 or more, and lymphocytes under 600 or under 8% of WBC ($900/16,000 = 5.6\%$). Hb is not under 10.5 g/dL, so it scores 0. Total 6.

Q32 · B The 2 ABVD + 20 Gy approach (HD16) applies only when every GHSG favourable criterion is met, including no more than two nodal regions. EORTC and NCCN allow up to three regions; she follows the chemotherapy-only (ABVD × 2 more) or CMT (ABVD × 1 + 30 Gy) pathway.

Q33 · B Two regions on the same side of the diaphragm (stage II) with limited contiguous extension into a neighbouring organ (E). Diffuse or non-contiguous organ involvement would be stage IV.

Q34 · C This is Deauville 4 at one site. Two more ABVD and PET4: Deauville 1–3 → 30 Gy; 4–5 → biopsy before calling it refractory. Multiple Deauville 4 sites or any Deauville 5 at PET2 need a biopsy first.

Q35 · D Send the node for histology, immunostains, mycobacterial culture and molecular TB tests. About 15% of cHL nodes contain granulomas, so a granuloma on a small sample does not exclude lymphoma. In Indian series, 16% of adults and 29% of children had anti-TB treatment before HL was diagnosed.

Q36 · E Thin-needle and endobronchial samples are often too small or crushed to separate cHL from primary mediastinal B-cell lymphoma, grey-zone lymphoma or thymic tumours. Large mediastinal masses can compress the airway under general anaesthesia.

Q37 · C CD30 in HRS cells typically gives membrane and Golgi (paranuclear dot) staining. Brentuximab vedotin is the anti-CD30 antibody-drug conjugate used in BV-AVD, BrECADD, salvage and maintenance.

Q38 · A For lymphoma staging, the spleen is lymphoid tissue. Involvement on both sides of the diaphragm is stage III; liver, lung, marrow or bone spread would be stage IV.

Q39 · D cHL in people living with HIV is almost always EBV-positive, often mixed cellularity or lymphocyte-depleted, and more often advanced with unusual spread. HIV testing is part of every work-up.

Q40 · A Either approach is acceptable: relapses after chemotherapy alone are usually salvaged, so survival is similar. The choice weighs relapse risk against late effects of RT (breast, heart, lung) and patient preference.

Q41 · D Absolute difference 9 percentage points; NNT = $100/9 \approx 11$.

Q42 · A N-AVD is contraindicated in autoimmune disease that needs immunosuppression. For patients up to about 60, BV-AVD with mandatory G-CSF is the alternative; RATHL is an option when neither is suitable.

- Q43 · E** Add a geriatric assessment and early review of fever. In the S1826 older subgroup, N-AVD gave 2-year PFS 89% vs 64% over BV-AVD. Bleomycin is avoided over 60 (E2496: 9% treatment deaths). Sequential BV → AVD → BV is the alternative.
- Q44 · D** In RATHL, omitting bleomycin after a negative PET2 gave the same outcomes with less lung toxicity (7-year PFS about 80%, OS 93%).
- Q45 · B** In HD0607, RT to masses of 5–7, 8–10 or over 10 cm made no PFS difference after a complete metabolic response to ABVD. RT is kept for a single PET-positive residual site.
- Q46 · A** Young women whose breasts would lie in the field, and patients with two or three thoracic sites, lean towards chemotherapy only. Neck-only disease makes CMT easier.
- Q47 · D** When the response cannot be measured, combined modality therapy is preferred over chemotherapy alone because relapses cannot be predicted. GHSG-favourable patients can have ABVD × 2 + 20 Gy.
- Q48 · E** HD21 enrolled adults up to 60 with stage III–IV or stage IIB with a large mediastinal mass or extranodal lesions; PET2-negative patients needed only 4 cycles. Expect febrile neutropenia (28%) and transfusions.
- Q49 · C** Grey-zone lymphoma, another cancer, infection or sarcoidosis can mimic relapse. After confirmation: checkpoint-based salvage, PET complete response, then autologous transplant.
- Q50 · B** AETHERA: in BV-naïve patients with a high-risk feature (primary refractory or relapse within 12 months, less than complete response to salvage, B symptoms or extranodal disease at relapse, two or more salvage lines), 5-year PFS was 59% vs 41%.
- Q51 · B** Checkpoint inhibitors can cause pseudoprogression and sarcoid-like reactions. A biopsy settles it when doubt persists.
- Q52 · E** For stage IA or contiguous IIA NLPHL, involved-site RT (30–36 Gy) gives better control than watching or rituximab alone. Watching is reasonable after complete excision if the patient prefers.
- Q53 · D** Stable disease in the first trimester is watched until organogenesis is complete. In the second and third trimesters ABVD can be given (AVD if more than two cycles), avoiding chemotherapy in the 3 weeks before delivery.
- Q54 · A** PET-CT is avoided during pregnancy; MRI and ultrasound stage the disease, and PET is done soon after delivery to guide the rest of treatment.
- Q55 · B** High-risk (stage III–IV) disease in adolescents: N-AVD (adolescent 2-year PFS 95% vs 83% with BV-AVD). BV-AVE-PC or BV-AVD are alternatives when nivolumab cannot be used.
- Q56 · A** Therapy-related AML and MDS peak 5–9 years after alkylating agents and are very rare after ABVD; a CBC at visits is simple surveillance.
- Q57 · D** The relative risks were 1.4, 3.1, 5.4 and 11.8 for ≤30, 31–35, 35–40 and ≥40 Gy. Modern 20–30 Gy involved-site fields carry far less risk than old mantle fields.
- Q58 · B** Risks were 10%, 6% and 4% for patients relapse-free at 1, 2 and 3 years. Late relapses still occur, so biopsy any suspected late relapse.
- Q59 · C** Women treated with chest RT between 10 and 30 years of age start screening at 25 (or 8 years after RT) and continue for life; the risk persists for decades.
- Q60 · B** 29% had received empirical anti-TB treatment, and they presented at a more advanced stage. In adults at Tata Memorial the figure was 16%.
- Q61 · D** G-CSF was mandatory with BV-AVD and optional with N-AVD. 2-year OS was 99% vs 98%; the PFS gain (92% vs 83%) was the main result, with fewer treatment discontinuations (9% vs 22%).
- Q62 · E** 6-year OS was 93.9% vs 89.4%. ECHELON-1 was the first trial in decades to show an overall survival gain in advanced cHL. ABVD was not PET-adapted, so all patients in that arm received 6 cycles of bleomycin.
- Q63 · C** Grade 3–4 adverse events 42% vs 59%; PET2-negative patients needed only 4 cycles. HD21 enrolled adults 18–60, including stage IIB with a large mediastinal mass or extranodal lesions. 4-year OS was 98.6% vs 98.2%; febrile neutropenia occurred in 28% with BrECADD.
- Q64 · D** OS 94.8% vs 94.3%; PFS 86.5% vs 91.4%. 20 of 22 relapses in the chemotherapy-only arm were at sites of earlier disease, the rationale for RT. Because relapses are salvageable, survival was unchanged.
- Q65 · C** Omitting RT raised the relapse risk (HR 1.78) without changing survival. Late effects were not reported.

- Q66 · A** Bulk is not by itself an indication for RT when the interim PET is negative; febrile neutropenia occurred in 8% without excess lung toxicity.
- Q67 · D** Bleomycin lung toxicity was fatal in 18% of those affected; grade ≥ 3 neutropenia occurred in 83%. This is why bleomycin is avoided over 60.
- Q68 · B** Febrile neutropenia and infections were commoner in older patients. The benefit of N-AVD was largest in older adults; plan G-CSF and early review of fever.
- Q69 · E** Two BV lead-in doses, six AVD cycles, then four BV consolidation cycles; one-third had grade 2 neuropathy, mostly reversible.
- Q70 · E** BV-based salvage gave 62%, platinum chemotherapy 50% and BV monotherapy 37%. Overall survival did not differ, and the comparisons are retrospective, but checkpoint-based salvage is now preferred.
- Q71 · A** Neuropathy improved in about 90%. Overall survival was confounded by crossover. Sensory neuropathy occurred in 56% vs 16%; it resolved completely in 73% at 5 years.
- Q72 · C** 3-year freedom from treatment failure was 55% vs 34%. This trial and the British BNLI trial established autologous transplant as the standard for chemosensitive relapse.
- Q73 · D** Post-transplant cyclophosphamide is considered for GVHD prophylaxis in this setting.
- Q74 · E** Chemoresistant 1 + extranodal 2 = 3, which falls in the intermediate group (1–3; 4-year PFS about 60%, vs 71% low and 42% high).
- Q75 · C** Re-treatment with nivolumab or pembrolizumab after discontinuation achieved responses similar to the initial course in reported series.
- Q76 · D** It helps HRS cells escape cytotoxic T cells. Immune escape in cHL also involves CIITA alterations (MHC class II), 9p24.1 gain (PD-L1/PD-L2), regulatory T cells and immunosuppressive cytokines.
- Q77 · C** ALCL: strong CD30, CD15 negative, PAX5 negative, T-cell antigens and cytotoxic markers, ALK positive or negative. cHL HRS cells are weakly PAX5-positive and usually CD15-positive.
- Q78 · C** Grey-zone lymphoma has features between cHL and primary mediastinal B-cell lymphoma and generally has a more aggressive course and inferior outcomes.
- Q79 · A** This is the LP ("popcorn") cell of NLPHL. NLPHL keeps a (partly) nodular, B-cell-rich pattern with FDC meshworks and CD57+ T-cell rosettes; THRLBCL is diffuse with CD8+ T cells and histiocytes and no FDC meshwork. Core needles may not show the pattern.
- Q80 · D** Age, stage and spleen score 3; treat with R-CHOP, R-CVbP or R-B. LP-IPS gives 1 point each for age ≥ 45 , stage III–IV, Hb < 10.5 g/dL and splenic involvement. LP-IPS ≥ 2 is higher risk; splenic involvement also raises the risk of transformation.
- Q81 · A** B symptoms and marrow involvement are unusual in NLPHL and suggest transformation, which is treated like an aggressive B-cell lymphoma. NLPHL does not transform into classic HL.
- Q82 · E** Overall survival was 100% vs 97% (not significant). Surveillance is acceptable after complete excision for patients who wish to avoid RT, accepting more relapses.
- Q83 · B** GPOH-HD-2002 and EuroNet-PHL-C1 showed that radiotherapy can be omitted after an adequate response to OEPA, sparing children its late effects.
- Q84 · D** RT was given for bulky mediastinal disease and slow responders in 53% and 57% of patients.
- Q85 · A** Low maternal and newborn counts at delivery raise the risk of haemorrhage and infection. Timing birth near 39 weeks and pausing chemotherapy beforehand reduces cytopenia-related complications; G-CSF can be used if neutropenia and delivery coincide.
- Q86 · B** Median onset was more than 20 years after treatment; there was little evidence of an increase at mean heart doses of 1–25 Gy.
- Q87 · A** Neppelenbroek 2024 found a doxorubicin dose-related increase in breast cancer risk in adolescent and adult survivors, in addition to the effect of chest RT.
- Q88 · E** Late relapses are uncommon but continue without a plateau; any suspected late relapse needs a biopsy because it may be NHL, another cancer or infection.

Q89 · E Risk rose by about 23% for each year of age at treatment. ABVD without pelvic RT preserves ovarian function in most women.

Q90 · D Second cancers and cardiovascular disease account for most late excess deaths, which is why follow-up shifts towards late effects after the first years.