

## ANSWER KEY

QUESTION 1	DISCUSSION RE: ANSWER OPTIONS
<p>According to the German Hodgkin's Study Group (GHSg) criteria, which of the following is considered a risk factor in early-stage Hodgkin lymphoma?</p> <ul style="list-style-type: none"> <li>a. Presence of extranodal disease</li> <li>b. Elevated LDH</li> <li>c. Mixed cellularity histology</li> <li>d. Age &gt; 50</li> </ul>	<p>Answer: A</p> <p>The risk factors per GHSg criteria for early-stage Hodgkin lymphoma are large mediastinal adenopathy, ESR<sub>≥</sub> 30 with B symptoms or <sub>≥</sub> 50 with no B Sx, &gt; 3 sites of disease, and presence of extranodal disease.</p>
REFERENCE FOR QUESTION 1	
<p>Engert et al. Reduced Treatment Intensity in Patients with Early-Stage Hodgkin's Lymphoma. N Engl J Med 2010; 363:640-652.</p>	
QUESTION 2	DISCUSSION RE: ANSWER OPTIONS
<p>29 year-old male with stage IA classical Hodgkin lymphoma with involvement of a 3 cm right cervical node. Patient is without B symptoms and blood work revealed sedimentation rate of 10. What is the most appropriate treatment approach for the patient?</p> <ul style="list-style-type: none"> <li>a. ABVD x 2, if PET complete response then no further treatment</li> <li>b. ABVD x 2 followed by 20 Gy radiation therapy to the right neck</li> <li>c. ABVD x 2 followed by 20 Gy radiation therapy to a mantle field</li> <li>d. ABVD x 4 followed by 30 Gy radiation therapy to the right neck</li> </ul>	<p>Answer: B</p> <p>This patient has low-risk early-stage Hodgkin lymphoma per GHSg criteria and is therefore a candidate for ABVD x 2 followed by 20 Gy localized radiation therapy.</p>
REFERENCES FOR QUESTION 2	
<p>Engert et al. Reduced Treatment Intensity in Patients with Early-Stage Hodgkin's Lymphoma. N Engl J Med 2010; 363:640-652.</p>	
QUESTION 3	DISCUSSION RE: ANSWER OPTIONS
<p>In the Cochrane analysis comparing chemotherapy alone versus combined modality therapy for early-stage Hodgkin lymphoma, the addition of radiation therapy to chemotherapy resulted in:</p> <ul style="list-style-type: none"> <li>a. No significant improvement in tumor control or overall survival</li> <li>b. Significant improvement in tumor control</li> </ul>	<p>Answer: D</p> <p>The Cochrane analysis comparing chemotherapy alone versus combined modality therapy for early-stage Hodgkin lymphoma showed a significant improvement in both tumor control and overall survival with the addition of radiation therapy to chemotherapy.</p>

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- but not overall survival
- c. Significant improvement in overall survival but not tumor control
  - d. Significant improvement in both tumor control and overall survival

### REFERENCES FOR QUESTION 3

Herbst et al. Combined modality treatment improves tumor control and overall survival in patients with early stage Hodgkin's lymphoma: a systematic review. *Haematologica* 2010; 95(3):494-500.

### QUESTION 4

35 yo female with stage IIA classical Hodgkin lymphoma with an 11 cm mediastinal mass at presentation. After ABVD x 2, restaging PET CT showed decrease in size of the mediastinal mass with an SUV max of 2.2, similar to mediastinal blood pool uptake. What is her response score according to the 5-point Deauville criteria?

- a. 4
- b. 3
- c. 2
- d. 1

### DISCUSSION RE: ANSWER OPTIONS

Answer: C

According to the Deauville criteria, FDG-uptake similar to mediastinal blood pool level corresponds to a score of 2.

### REFERENCE FOR QUESTION 4

Meignan et al. Report on the Third International Workshop on Interim Positron Emission Tomography in Lymphoma held in Menton, France, 26-27 September 2011 and Menton 2011 consensus. *Leuk Lymphoma* 2012;53(1):1876-1881.

### QUESTION 5

The addition of Rituximab to CHOP chemotherapy in patients with CD20-positive diffuse large B-cell lymphoma results in how much of an improvement in overall survival?

- a. <5%
- b. 10-15%
- c. 25-30%
- d. 40-45%

### DISCUSSION RE: ANSWER OPTIONS

Answer: B

Based on randomized trial results, the improvement in 3 to 5-year overall survival ranges from around 10-15% with the addition of Rituximab to CHOP.

### REFERENCE FOR QUESTION 5

Pfreundschuh et al. Six versus eight cycles of bi-weekly CHOP-14 with or without rituximab in elderly patients with aggressive CD20+ B-cell lymphomas: a randomised controlled trial (RICOVER-60). *Lancet Oncol.* 2008;9(2):105-16.

### QUESTION 6

Which of the following is the most appropriate

### DISCUSSION RE: ANSWER OPTIONS

## ANSWER KEY

radiation dose in a patient with stage IA diffuse large B-cell lymphoma of the groin after R-CHOP x4 with a complete response by PET-CT?

- a. 30 Gy
- b. 40 Gy
- c. 44 Gy
- d. 50 Gy

Answer: A

Results of the UK randomized trial showed that 30 Gy is an adequate dose for consolidation after chemotherapy in patients with aggressive non-Hodgkin lymphoma.

### REFERENCE FOR QUESTION 6

Lowry et al. Reduced dose radiotherapy for local control in non-Hodgkin lymphoma: a randomised phase III trial. *Radiother Oncol.* 2011;100(1):86-92.

### QUESTION 7

The 10-year failure-free survival of definitive radiation therapy for stage I follicular lymphoma is approximately:

- a. 10-15%
- b. 25-30%
- c. 45-50%
- d. 75-80%

### DISCUSSION RE: ANSWER OPTIONS

Answer: C

Retrospective series on the long-term outcome of definitive radiation therapy for localized follicular lymphoma showed fairly consistent findings of a 10-year failure-free survival rate of approximately 45-50%

### REFERENCE FOR QUESTION 7

Guadagnolo et al. Long-term outcome and mortality trends in early-stage, Grade 1-2 follicular lymphoma treated with radiation therapy. *Int J Radiat Oncol Biol Phys.* 2006;64(3):928-34

### QUESTION 8

The response rate of 2Gy x 2 palliative radiation therapy for indolent lymphoma is estimated at:

- a. 80-90%
- b. 60-70%
- c. 40-50%
- d. 20-30%

### DISCUSSION RE: ANSWER OPTIONS

Answer: A

Retrospective series on low-dose radiation therapy of 2Gy x 2 as palliation for indolent lymphoma showed an overall response rate of approximately 80-90%.

### REFERENCE FOR QUESTION 8

Russo et al. Low-dose involved-field radiation in the treatment of non-hodgkin lymphoma: predictors of response and treatment failure. *Int J Radiat Oncol Biol Phys.* 2013;86(1):121-7.

### QUESTION 9

The recommended clinical target volume to planning target volume expansion according to the International Lymphoma Radiation Oncology Group (ILROG) guidelines is:

- a. Isotropic 1 cm expansion
- b. 1 cm axial and 2 cm cranial caudal

### DISCUSSION RE: ANSWER OPTIONS

Answer: D

In the ILROG guidelines, there was no specification on the CTV to PTV expansion, but rather, the recommendation is to individualize the expansion margin according to clinical setting.

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- expansion
- c. 2 cm axial and 3 cm cranial caudal expansion
  - d. Expansion margin individualized depending on immobilization device, body site, and patient cooperation

### REFERENCE FOR QUESTION 9

Specht et al. Modern Radiation Therapy for Hodgkin Lymphoma: Field and Dose Guidelines From the International Lymphoma Radiation Oncology Group (ILROG). [Int J Radiat Oncol Biol Phys.](#) 2013 Jun 18. pii: S0360-3016(13)00534-8. doi: 10.1016/j.ijrobp.2013.05.005. [Epub ahead of print].

### QUESTION 10

The 5-year progression survival rates with use of involved-node radiation therapy (INRT) as part of combined modality therapy in the treatment early-stage Hodgkin lymphoma are approximately:

- a. 60-70%
- b. 70-80%
- c. 80-90%
- d. > 90%

### DISCUSSION RE: ANSWER OPTIONS

Answer: D

Studies have shown an excellent outcome with INRT as part of combined modality therapy for early-stage Hodgkin lymphoma, with 5-year progression free survival.

rates of well over 90%

### REFERENCE FOR QUESTION 10

Maraldo et al. Involved node radiation therapy: an effective alternative in early-stage hodgkin lymphoma. [Int J Radiat Oncol Biol Phys.](#) 2013;85(4):1057-65.