

Gynecologic Radiation Oncology

10 High-Yield Board-Style Practice Questions

Original board-style practice questions for radiation oncology residents, written in ABR single-best-answer format with detailed rationales. These are original questions created for educational review and are not reproductions of actual ABR examination content.

Question 1

A patient with cervical cancer appears clinically confined to the cervix on physical examination, but pelvic MRI and PET/CT reveal an enlarged, PET-avid pelvic lymph node. Under the current (2018-revised) FIGO staging system, how should this be staged?

- A. Stage 0
- B. Stage IIIC1r, because imaging-detected pelvic nodal metastasis is incorporated into FIGO 2018 staging
- C. This scenario cannot be staged using FIGO criteria
- D. Stage IV, based on any nodal finding
- E. Stage I, because nodal findings are not incorporated into FIGO staging

Answer: B. Stage IIIC1r, because imaging-detected pelvic nodal metastasis is incorporated into FIGO 2018 staging

Rationale: FIGO 2018 incorporates lymph-node metastases into cervical cancer staging. Pelvic nodal metastasis is classified as Stage IIIC1, whereas para-aortic nodal metastasis is Stage IIIC2. The suffix “r” denotes staging based on imaging findings, whereas “p” denotes pathologically confirmed nodal involvement.

Reference:

Bhatla N, Berek JS, Cuello Fredes M, et al. Revised FIGO staging for carcinoma of the cervix uteri. *Int J Gynaecol Obstet.* 2019;145(1):129-135.

Question 2

How can molecular classification affect FIGO 2023 staging of early endometrial cancer?

- A. Molecular classification replaces all anatomic staging
- B. Molecular classification is relevant only to cervical cancer
- C. POLE-mutated or p53-abnormal status can modify the FIGO stage of Stage I-II disease, while molecular class also provides prognostic and treatment information
- D. Molecular classification has no formal staging role
- E. Only MMR-deficient status changes the anatomic stage

Answer: C. POLE-mutated or p53-abnormal status can modify the FIGO stage of Stage I-II disease, while molecular class also provides prognostic and treatment information

Rationale: FIGO 2023 incorporates molecular classification when available. In early disease, a pathogenic POLE-mutated carcinoma confined to the uterus or with cervical extension is designated Stage IAmpOLEmut, whereas p53-abnormal carcinoma confined to the uterine corpus with any myometrial invasion, with or without cervical invasion, is designated Stage IICmp53abn. MMR-deficient (MMRd) and no-specific-molecular-profile (NSMP) tumors are recorded by molecular subtype but do not themselves alter the early anatomic stage.

Reference:

Berek JS, Matias-Guiu X, Creutzberg C, et al. FIGO staging of endometrial cancer: 2023. *Int J Gynaecol Obstet.* 2023;162(2):383-394.

Question 3

A patient undergoes comprehensive surgical staging for suspected ovarian cancer, and pathology reveals microscopic disease in a single para-aortic lymph node without any peritoneal spread beyond the ovaries. How should this be staged?

- A. Stage IV, based on any nodal involvement
- B. This scenario cannot be staged
- C. Stage I, because there is no peritoneal spread
- D. Stage II, based on pelvic extension
- E. Stage IIIA1, reflecting retroperitoneal lymph-node involvement alone without peritoneal spread, a distinct category from peritoneal-based Stage III disease

Answer: E. Stage IIIA1, reflecting retroperitoneal lymph-node involvement alone without peritoneal spread, a distinct category from peritoneal-based Stage III disease

Rationale: Isolated retroperitoneal lymph-node involvement without peritoneal spread beyond the pelvis is classified as Stage IIIA1. FIGO further subdivides IIIA1 according to the size of the largest nodal metastasis: IIIA1(i) ≤ 10 mm and IIIA1(ii) > 10 mm.

Reference:

Prat J; FIGO Committee on Gynecologic Oncology. Staging classification for cancer of the ovary, fallopian tube, and peritoneum. Int J Gynaecol Obstet. 2014;124(1):1-5.

Question 4

Pelvic lymph-node involvement in vulvar cancer is classified as which of the following, in contrast to its classification in cervical or endometrial cancer?

- A. Pelvic nodes are never involved in vulvar cancer
- B. Distant metastatic (M1) disease, a distinction from cervical and endometrial cancer where pelvic nodes are considered regional
- C. T category, not a nodal or metastatic category
- D. Regional disease, identical to its classification in cervical cancer
- E. Classified identically regardless of the specific gynecologic malignancy

Answer: B. Distant metastatic (M1) disease, a distinction from cervical and endometrial cancer where pelvic nodes are considered regional

Rationale: The regional nodal basin for vulvar cancer consists of the inguinofemoral lymph nodes. Pelvic lymph-node involvement represents distant metastatic disease rather than regional nodal disease and is therefore classified as Stage IVB/M1 disease.

Reference:

Olawaiye AB, Cotler J, Cuello MA, et al. FIGO staging for carcinoma of the vulva: 2021 revision. Int J Gynaecol Obstet. 2021;155(1):43-47.

Question 5

A patient with locally advanced cervical cancer is treated with definitive chemoradiation followed by image-guided adaptive brachytherapy. According to EMBRACE II principles, what cumulative EQD2 dose to the HR-CTV D90 represents the commonly accepted minimum prescribed-dose target?

- A. ≥ 60 Gy
- B. ≥ 70 Gy
- C. ≥ 80 Gy
- D. ≥ 85 Gy
- E. ≥ 100 Gy

Answer: D. ≥ 85 Gy

Rationale: Modern image-guided adaptive brachytherapy aims to maximize HR-CTV coverage while respecting organ-at-risk constraints. Under EMBRACE II principles, the cumulative HR-CTV D90 prescribed-dose lower limit is >85 Gy EQD2₁₀, combining external-beam radiation therapy and brachytherapy. The optimal planning aim is approximately 90–95 Gy EQD2₁₀ when achievable within normal-tissue constraints. Therefore, ≥ 85 Gy is the best answer when asking for the commonly accepted minimum target.

References:

Pötter R, Tanderup K, Kirisits C, et al. The EMBRACE II study: the outcome and prospect of two decades of evolution within the GEC-ESTRO GYN working group and the EMBRACE studies. *Clin Transl Radiat Oncol*. 2018;9:48-60.

Viswanathan AN, Beriwal S, De Los Santos JF, et al. American Brachytherapy Society consensus guidelines for locally advanced carcinoma of the cervix. Part II: high-dose-rate brachytherapy. *Brachytherapy*. 2012;11(1):47-52.

Question 6

In image-guided adaptive brachytherapy for cervical cancer, which dose-volume parameter is most established for predicting late rectal toxicity?

- A. Rectum D2cc
- B. Bladder D2cc
- C. Sigmoid Dmean
- D. Small bowel D2cc
- E. Rectum Dmean

Answer: A. Rectum D2cc

Rationale: Rectum D2cc is an established dose-volume parameter associated with late rectal toxicity following cervical cancer brachytherapy. In EMBRACE II, the cumulative rectal D2cc planning aim is approximately <65 Gy EQD2₃, with a prescribed-dose upper limit of <75 Gy EQD2₃. The cumulative EQD2 includes contributions from both external-beam radiation therapy and brachytherapy.

References:

Pötter R, Tanderup K, Kirisits C, et al. The EMBRACE II study: the outcome and prospect of two decades of evolution within the GEC-ESTRO GYN working group and the EMBRACE studies. *Clin Transl Radiat Oncol*. 2018;9:48-60.

Mazon R, Fokdal LU, Kirchheiner K, et al. Dose-volume effect relationships for late rectal morbidity in patients treated with chemoradiation and MRI-guided adaptive brachytherapy for locally advanced cervical cancer: results from the prospective multicenter EMBRACE study. *Radiother Oncol*. 2016;120(3):412-419.

Question 7

The phase III INTERLACE trial evaluated the addition of induction chemotherapy before standard chemoradiation for locally advanced cervical cancer. What was the key finding?

- A. Induction chemotherapy increased pelvic recurrence rates
- B. Induction chemotherapy followed by chemoradiation significantly improved progression-free and overall survival compared with chemoradiation alone
- C. Induction chemotherapy had no effect on survival outcomes
- D. Induction chemotherapy was beneficial only in node-negative patients
- E. Induction chemotherapy increased toxicity without improving survival

Answer: B. Induction chemotherapy followed by chemoradiation significantly improved progression-free and overall survival compared with chemoradiation alone

Rationale: INTERLACE demonstrated that 6 weeks of weekly carboplatin (AUC 2) plus paclitaxel (80 mg/m²) before standard cisplatin-based chemoradiation significantly improved both progression-free and overall survival. At 5 years, PFS was approximately 72% versus 64%, and OS was approximately 80% versus 72%, favoring induction chemotherapy. Grade ≥ 3 adverse events were more frequent with induction chemotherapy.

Reference:

McCormack M, Eminowicz G, Gallardo D, et al.; INTERLACE Investigators. Induction chemotherapy followed by standard chemoradiotherapy versus standard chemoradiotherapy alone in patients with locally advanced cervical cancer (GCIIG INTERLACE): an international, multicentre, randomised phase 3 trial. *Lancet*. 2024;404(10462):1525-1535.

Question 8

In the phase III KEYNOTE-A18 trial, the addition of pembrolizumab to chemoradiation for high-risk locally advanced cervical cancer demonstrated which result?

- A. No improvement in efficacy outcomes
- B. Significant improvement in progression-free survival, with subsequent follow-up also demonstrating improved overall survival
- C. Benefit restricted to PD-L1-positive tumors
- D. Benefit restricted to squamous cell carcinoma
- E. Benefit only when brachytherapy was omitted

Answer: B. Significant improvement in progression-free survival, with subsequent follow-up also demonstrating improved overall survival

Rationale: KEYNOTE-A18 demonstrated that pembrolizumab administered concurrently with chemoradiation and then continued as maintenance therapy significantly improved progression-free survival compared with chemoradiation alone. Subsequent analysis also demonstrated a statistically significant overall-survival benefit. PD-L1 positivity was not required for trial enrollment or for the treatment strategy.

References:

Lorusso D, Xiang Y, Hasegawa K, et al.; ENGOT-cx11/GOG-3047/KEYNOTE-A18 Investigators. Pembrolizumab or placebo with chemoradiotherapy followed by pembrolizumab or placebo for newly diagnosed, high-risk, locally advanced cervical cancer: a randomised, double-blind, phase 3 clinical trial. *Lancet*. 2024;403(10434):1341-1350.

Lorusso D, Xiang Y, Hasegawa K, et al.; ENGOT-cx11/GOG-3047/KEYNOTE-A18 Investigators. Pembrolizumab or placebo with chemoradiotherapy followed by pembrolizumab or placebo for newly diagnosed, high-risk, locally advanced cervical cancer: overall survival results from a randomised, double-blind, placebo-controlled, phase 3 trial. *Lancet*. 2024;404(10460):1321-1332.

Question 9

Long-term follow-up of the PORTEC-3 trial helped clarify which point regarding adjuvant treatment of high-risk endometrial cancer?

- A. Radiation alone is superior to chemoradiation in all high-risk subgroups
- B. Combined chemoradiation improves long-term recurrence-free and overall survival, with particularly important benefit in p53-abnormal tumors and in patients with stage III disease
- C. Chemotherapy alone is equivalent to chemoradiation in all high-risk patients
- D. Vaginal brachytherapy alone is sufficient for all high-risk endometrial cancers
- E. Adjuvant treatment provides no benefit in high-risk endometrial cancer

Answer: B. Combined chemoradiation improves long-term recurrence-free and overall survival, with particularly important benefit in p53-abnormal tumors and in patients with stage III disease

Rationale: Ten-year PORTEC-3 follow-up demonstrated improved overall survival and recurrence-free survival with adjuvant chemoradiation compared with pelvic radiation alone in high-risk endometrial cancer. Ten-year OS was 74.4% versus 67.3%, and RFS was 72.8% versus 67.4%. The strongest molecular signal of benefit was observed in p53-abnormal tumors: 10-year OS was 52.7% with chemoradiation versus 36.6% with radiation alone, and 10-year RFS was 52.6% versus 37.0%. Stage III disease was also an important clinicopathologic subgroup showing benefit, with 10-year OS of 69.5% versus 56.1% and RFS of 67.0% versus 55.5%. However, p53-abnormal status represents the most clinically relevant molecular subgroup signal and should not be considered equivalent to stage III disease as a biomarker.

Reference:

Post CCB, de Boer SM, Powell ME, et al. Adjuvant chemoradiotherapy versus radiotherapy alone in women with high-risk endometrial cancer (PORTEC-3): 10-year clinical outcomes and post-hoc analysis by molecular classification from a randomised phase 3 trial. *Lancet Oncol.* 2025;26(10):1370-1381.

Question 10

Molecular classification of endometrial cancer based on the TCGA/ProMisE framework is increasingly incorporated into adjuvant treatment decisions. Which molecular subtype has the most favorable prognosis and may be appropriate for de-escalation of adjuvant therapy in selected patients?

- A. Copy-number high/p53-abnormal
- B. POLE-ultramutated
- C. Mismatch repair-deficient (MMRd)
- D. No specific molecular profile (NSMP)
- E. TP53-mutant

Answer: B. POLE-ultramutated

Rationale: POLE-mutated endometrial cancers have an exceptionally favorable prognosis, including among some patients with otherwise high-risk clinicopathologic features. FIGO 2023 formally incorporates POLE-mutated status into early-stage classification. PORTEC-4a further demonstrated that molecular-profile-directed adjuvant treatment in high-intermediate-risk endometrial cancer can be used to individualize treatment intensity rather than applying vaginal brachytherapy uniformly to all patients. These findings support molecularly guided treatment de-escalation in appropriately selected patients, although adjuvant treatment decisions should incorporate the complete clinicopathologic and molecular risk profile.

References:

Berek JS, Matias-Guiu X, Creutzberg C, et al. FIGO staging of endometrial cancer: 2023. *Int J Gynaecol Obstet.* 2023;162(2):383-394.

van den Heerik ASVM, Horeweg N, Haverkort MAD, et al. Molecular profile-based adjuvant treatment for women with high-intermediate risk endometrial cancer (PORTEC-4a): results of a randomised, open-label, phase 3, multicentre, non-inferiority trial. *Lancet Oncol.* 2026;27(1):23-35.

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