Questions used in the study with answers of LLM and evaluations

The following are the 50 questions used in the study, together with the difficulty (mean of individual values) rated by the clinical experts, as well as the answers of the LLM OpenBioLLM-70B with the quality scores given by the physicians.

**Prostate**

**1. Question:**

“Is hypofractionated radiotherapy in local recurrence after primary prostatectomy equal to normofractionated therapy?”

**Answer:**

“Yes, hypofractionated radiotherapy has been shown to be equal to normofractionated therapy in terms of efficacy for local recurrence after primary prostatectomy.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**2. Question:**

“What would be an absolute cardiological contraindication against an ADT for prostate cancer?”

**Answer:**

“Severe cardiac disease would be an absolute cardiological contraindication against androgen deprivation therapy (ADT) for prostate cancer.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 2 (Bad)

**3. Question:**

“What is the role of ADT in the salvage irradiation after radical prostatectomy?”

**Answer:**

“The role of ADT in salvage irradiation after radical prostatectomy is to lower the PSA level and improve treatment outcomes.”

**Difficulty of Question:** 3

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**4. Question:**

“Is there a benefit from clinical hyperthermia combined with radiotherapy in bulky prostate cancer?”

**Answer:**

“Yes, there is a benefit from clinical hyperthermia combined with radiotherapy in bulky prostate cancer.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 3 (Acceptable)

**5. Question:**

“Should we add ADT to the Salvage brachytherapy for the treatment of local recurrent prostate cancer?”

**Answer:**

“Yes, adding ADT to salvage brachytherapy improves outcomes in patients with local recurrent prostate cancer.”

**Difficulty of Question:** 3.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 1 (Very Bad)

**Evaluation (second reviewer):** 2 (Bad)

**6. Question:**

“Do you always perform a Biopsy to confirm the local recurrence of prostate cancer in case you have PSA-Elevation with positive PSMA-PET-CT and local lesion in the mpMRI prostate?”

**Answer:**

“No, a biopsy is not always performed to confirm local recurrence of prostate cancer in cases of PSA elevation with positive PSMA-PET-CT and a local lesion on mpMRI of the prostate. The decision for biopsy may depend on various factors such as the patient's overall health, previous treatment history, and the presence of symptoms. The final decision should be made in consultation with a multidisciplinary team.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 5 (Very Good)

**7. Question:**

“In case treating the local recurrent prostate cancer with SBRT: How many fractions are you doing?

1) Single Fraction

2) 2 Fractions

3) 3 Fractions

4) 4 Fractions

5) 5 Fractions

6) 6 Fractions

7) 7 Fractions

8) other protocol? What is the single dose and the whole dose?”

**Answer:**

“In the case of treating local recurrent prostate cancer with SBRT, the standard practice is to deliver a total of 5 fractions.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 2 (Bad)

**8. Question:**

“In case you are treating local recurrent prostate cancer with brachytherapy, what brachytherapy protocol are you doing? What is the single dose and the whole doses?

1) single fraction

2) 2 fractions

3) 3 fractions

4) 4 fractions

5) 5 fractions”

**Answer:**

“In case of local recurrent prostate cancer, the brachytherapy protocol used is high-dose rate (HDR) brachytherapy. The single dose is typically 13 Gy and the whole doses can range from 26-36 Gy in 2-3 fractions.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 1 (Very Bad)

**Evaluation (second reviewer):** 3 (Acceptable)

**9. Question:**

“Are you combining ADT with your Re-irradiation for locally recurrent prostate cancer? If yes, for how long?”

**Answer:**

“Yes, I am combining ADT with Re-irradiation for locally recurrent prostate cancer. The duration of ADT can vary depending on the patient's specific case and response to treatment. It is typically recommended to continue ADT for at least 2 years, but the optimal duration should be determined by the treating physician based on individual patient factors.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 4 (Good)

**10. Question:**

“Given a patient for which a salvage radiotherapy of locally recurrent prostate carcinoma is planned after initital definitive radiotherapy with an EQD2 of 80 Gy two years ago. Which dose constraint do apply for the rectum and bladder organs-at-risk?”

**Answer:**

“For the rectum, the dose constraint is 50 Gy. For the bladder, the dose constraint is 60 Gy.”

**Difficulty of Question:** 3.33

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 1 (Very Bad)

**Evaluation (second reviewer):** 2 (Bad)

**11. Question:**

“For a patient with a prostate cancer Gleason 7a, PSA 8 ng/ml and a cancer limited to the prostate on MRI we found a PSMA-negative but morphologically suspect (1cm) lymph node. Biopsy or other imaging is not an option, how should we treat this patient with radiotherapy and hormonal therapy?”

**Answer:**

“For a patient with prostate cancer Gleason 7a, PSA 8 ng/ml, and a PSMA-negative but morphologically suspect lymph node, the recommended treatment would be radiotherapy to the prostate and pelvic lymph nodes along with hormonal therapy. This approach is based on the assumption that the lymph node may be involved despite being PSMA-negative, and treating it with radiotherapy can help reduce the risk of recurrence. Hormonal therapy is added to decrease the testosterone levels, which can help in shrinking the tumor and improving treatment outcomes.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Prostate

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 2 (Bad)

**Gynecological**

**12. Question:**

**“**What ist the α/β ratio for endometrial cancer?”

**Answer:**

**“**The α/β ratio for endometrial cancer is 10.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 2 (Bad)

**Evaluation (second reviewer):** 2 (Bad)

**13. Question:**

“When contouring for EBRT in gynecological tumors, is the conventionally used CTV-margin around pelvic vessels (of about 7mm) cropped from bowel loops in larger gynecological trials or current guidelines?”

**Answer:**

“Yes, the conventionally used CTV-margin around pelvic vessels (of about 7mm) is cropped from bowel loops in larger gynecological trials or current guidelines.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 5 (Very Good)

**Evaluation (second reviewer):** 5 (Very Good)

**14. Question:**

“The SOUND trial (PMID 37733364) permits omission of axillary sentinel lymph node biopsy in early stage breast cancer if it has no consequence on further treatment. How should this be registered in the TNM stage? pNx or cN0?”

**Answer:**

“According to the SOUND trial, if axillary sentinel lymph node biopsy is omitted in early stage breast cancer and it has no consequence on further treatment, the correct registration in the TNM stage would be cN0.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 4 (Good)

**15. Question:**

“In this question, I want to know which regions to irradiate in breast cancer. I have a 59 year old patient suffering from left sided breast cancer. Initial staging was cT1c(m2) cN1 cM0 with 2 positive axillary lymph nodes on MRI, with confirmation by biopsy. Initial treatment was 4 cycles of AC, followed by 12x paclitaxel weekly. She then received tumorectomy with sentinel lymph node exision, which showed residual tumor in both foci as well as one of two sentinel lymph nodes (ypT1c(M:2) ypN1(1/2 sn)). What should be the dose and fractionation of adjuvant whole breast radiotherapy, and which regions of the lymphatic drainage should be included?”

**Answer:**

“The recommended dose and fractionation for adjuvant whole breast radiotherapy is 40 Gy in 15 fractions or 50 Gy in 25 fractions. The regions of lymphatic drainage that should be included are the axilla, internal mammary lymph nodes, and supraclavicular lymph nodes.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 4 (Good)

**16. Question:**

“How do you mark off the borders of the breast at the time of the planning CT when preparing an adjuvant breast radiation treatment?”

**Answer:**

“The borders of the breast are typically marked off at the time of the planning CT by the radiation oncologist using anatomical landmarks such as the sternal notch, midline, and lateral border of the pectoralis major muscle.”

**Difficulty of Question:** 2

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**17. Question:**

“What are the most common acute side effects of adjuvant breast radiotherapy and how do they evolve over the course of treatment and immediately afterwards?”

**Answer:**

“The most common acute side effects of adjuvant breast radiotherapy include skin reactions such as erythema, desquamation, and fatigue. These side effects typically start to appear around the third week of treatment, peak at the end of treatment, and resolve within 4-6 weeks after treatment completion.”

**Difficulty of Question:** 1.67

**Thematic assignment:** Gynecological

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**Palliative**

**18. Question:**

“What is the median overall survival of patients suffering from brainstem metastases? Do we achieve superior overall survival if stereotactic radiotherapy is applied as treatment for brainstem metastases in comparison to no radiotherapy?”

**Answer:**

“The median overall survival for patients with brainstem metastases is typically 4-6 months. Stereotactic radiotherapy has been shown to improve overall survival compared to no radiotherapy in the treatment of brainstem metastases.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 3 (Acceptable)

**19. Question:**

“What are the recommended prescribed doses for the Planning Target Volume (PTV) in Stereotactic Body Radiation Therapy (SBRT) treatments across various metastatic diseases, such as those affecting the lung, liver, and other organs, specifically addressing whether the optimal dosage falls within the range of 80% or 60%?”

**Answer:**

“The recommended prescribed doses for the Planning Target Volume (PTV) in Stereotactic Body Radiation Therapy (SBRT) treatments vary depending on the organ being treated. For lung SBRT, the optimal dosage is typically within the range of 60% to 80%. For liver SBRT, the optimal dosage is usually within the range of 80%. For other organs, the optimal dosage can vary and should be determined based on specific clinical guidelines and patient factors.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 4 (Good)

**20. Question:**

“What is the recommended management for a patient which is treated with cortisone for a brain edema after radiotherapy and the symptoms worsen as soon as the cortisone dose is reduced?”

**Answer:**

“The recommended management for this patient is to increase the dose of cortisone and then taper it off more slowly to prevent withdrawal symptoms and worsening of the brain edema.”

**Difficulty of Question:** 3

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**21. Question:**

“A 90-year-old multimorbid patient presents with osseous lymphogenous metastasized urothelial carcinoma. He has thoracic and scapular pain, ct -graphically there is an osseous metastasis scapular with soft tissue infiltration. The patient also has a painful metastasis from the 12th to the 10th rib. The tumorboard recommends a palliative analgetic approach. What do you do?”

**Answer:**

“Given the patient's age, multimorbidities, and the presence of osseous metastases with soft tissue infiltration, the recommended palliative analgetic approach is appropriate. This typically involves pain management with medications such as opioids, along with best supportive care. Additionally, external beam radiation therapy may be considered for symptom control of the painful metastases.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**22. Question:**

“73-year-old patient with primary metastatic salivary duct carcinoma (cerebral, pulmonary, hepatic, lymphogenic and osseous).Primary metastatic tumor, the patient was treated with systemic therapy 2 cycles of chemotherapy with carboplatin, paclitaxel. Dizziness and unsteady gait due to increasing headaches. What is your suspected diagnosis and what is the most important therapy against these symptoms?”

**Answer:**

“The suspected diagnosis is cerebral metastases. The most important therapy against these symptoms is whole-brain radiation therapy.”

**Difficulty of Question:** 2.33

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 2 (Bad)

**23. Question:**

“60-year-old female patient with breast cancer and brain metastases develops increasing dizziness and headaches during whole-brain irradiation with 10 x 3 Gy at the 6th fraction. What do you do next?”

**Answer:**

“You should evaluate the patient for increased intracranial pressure and consider a treatment break or a change in treatment regimen.”

**Difficulty of Question:** 2

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 4 (Good)

**24. Question:**

“If whole-brain radiotherapy is being performed, how to chose between 5x4 or 10x3 Gy?”

**Answer:**

“The choice between 5x4 or 10x3 Gy for whole-brain radiotherapy depends on the patient's performance status and the extent of extracranial disease.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Palliative

**Evaluation (questioner reviewer):** 2 (Bad)

**Evaluation (second reviewer):** 4 (Good)

**Central Nervous System**

**25. Question:**

“Follow-up image of PET DOTATOC for a meningioma reveiled an incidental finding in the pancreas. Histology after biopsy revealed “Monotonous epitheloid neoplasia”. What are the differential diagnosis for this and how will ongoing immunohistochemistry help here?”

**Answer:**

“Differential diagnoses for monotonous epitheloid neoplasia in the pancreas include pancreatic neuroendocrine tumor (NET), acinar cell carcinoma, and solid pseudopapillary neoplasm. Immunohistochemistry can help differentiate these by assessing the expression of markers such as chromogranin A, synaptophysin (for NET), acinar cell markers (such as trypsin or amylase), and beta-catenin (for solid pseudopapillary neoplasm).”

**Difficulty of Question:** 4

**Thematic assignment:** Central Nervous System

**Evaluation (questioner reviewer):** 5 (Very Good)

**Evaluation (second reviewer):** 5 (Very Good)

**26. Question:**

“What is the incidence and 5 year prognosis of grade 3 pleomorphic xanthoastrocytoma?”

**Answer:**

“The incidence of grade 3 pleomorphic xanthoastrocytoma is less than 1% of all brain tumors. The 5-year survival rate for patients with this type of tumor is approximately 80%.”

**Difficulty of Question:** 3.67

**Thematic assignment:** Central Nervous System

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**27. Question:**

“For a young patient being treated with radiotherapy for medulloblastoma to a dose of up to 59.4 Gy, if radiotherapy is not possible on the Thursday of the last week of treatment (5 days were planned Mo-Fr) - is it better to compensate with a different dose on Friday, catch up on Monday or just ignore the 1 missing fraction?”

**Answer:**

“It is better to compensate with a different dose on Friday.”

**Difficulty of Question:** 2

**Thematic assignment:** Central Nervous System

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**28. Question:**

“What dose to choose for a single-fraction treatment (stereotactic radiosurgery) of a schwanomma?”

**Answer:**

“The appropriate dose for a single-fraction treatment (stereotactic radiosurgery) of a schwannoma is typically 12-13 Gy.”

**Difficulty of Question:** 2

**Thematic assignment:** Central Nervous System

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 5 (very Good)

**29. Question:**

“What is the difference in contouring guidelines and dose-fractionation schedules between ASTRO and ESTRO regarding the radiotherapeutic treatment of glioblastoma?”

**Answer:**

“ASTRO and ESTRO have different contouring guidelines and dose-fractionation schedules for glioblastoma. ASTRO recommends a simultaneous integrated boost technique with 60 Gy to the gross tumor volume (GTV) and 30 Gy to the clinical target volume (CTV) in 30 fractions. ESTRO suggests a sequential boost with 40 Gy to the CTV in 20 fractions followed by a boost of 20 Gy to the GTV in 10 fractions.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Central Nervous System

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 2 (Bad)

**Head and Neck**

**30. Question:**

“Different strategies and definitions are in use when talking about major perineural invasion in squamous cell carcinoma of the head and neck area (skin or mucosal SCC). Some use a specific diameter of nerve infiltration (e.g. 0.1mm), some use the definition of "named nerves". Can you provide me the level of evidence for these different approaches with the corresponding literature (author, year, PMID) or guidelines, respectively, to support these definitions and conventions in use?”

**Answer:**

“There are different strategies and definitions for major perineural invasion in squamous cell carcinoma of the head and neck, including the use of a specific diameter of nerve infiltration (e.g. 0.1mm) or the involvement of 'named nerves'. The level of evidence for these approaches can be found in various literature and guidelines. For example, the 8th edition of the AJCC Cancer Staging Manual defines perineural invasion as tumor invasion into the nerves with a diameter of 0.1mm or larger (PMID: 28230451). Additionally, the NCCN Guidelines for Head and Neck Cancers consider perineural invasion as involvement of named nerves (https://www.nccn.org/professionals/physician\_gls/pdf/head-and-neck.pdf).”

**Difficulty of Question:** 4

**Thematic assignment:** Head and Neck

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**31. Question:**

“What percentage of radiation dose is absorbed in the bone of the scalp for the following scenario: superficial orthovoltage treatment with an energy of 80kV in the adjuvant setting of a cutaneous squamous cell carcinoma that has an estimated thickness of about 6mm soft tissue (skin, connective tissue) covering the bone?”

**Answer:**

“20% of the radiation dose is absorbed in the bone of the scalp.”

**Difficulty of Question:** 3.33

**Thematic assignment:** Head and Neck

**Evaluation (questioner reviewer):** 1 (Very Bad)

**Evaluation (second reviewer):** 4 (Good)

**32. Question:**

“What are common fractionation schedules for moderate hypofractionation (single doses >2.5 Gy) for a localized squamous cell carcinoma of the skin in the head and neck area treated with a linear accelerator? What about when treatment would be done at orthovoltage radiotherapy machine?”

**Answer:**

“For moderate hypofractionation using a linear accelerator, common fractionation schedules for localized squamous cell carcinoma of the skin in the head and neck area include 6 Gy x 5 fractions, 7 Gy x 4 fractions, and 8 Gy x 3 fractions. When using an orthovoltage radiotherapy machine, common fractionation schedules include 5 Gy x 6 fractions, 6 Gy x 5 fractions, and 7 Gy x 4 fractions.”

**Difficulty of Question:** 3

**Thematic assignment:** Head and Neck

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 1 (Very Bad)

**33. Question:**

“What are possible reasons for a reduced quality of a planning CT in the head and neck region, when a mask was used to reduce motion artefacts and acquisition settings were not changed from a last planning CT that was in good quality?”

**Answer:**

“Possible reasons for a reduced quality of a planning CT in the head and neck region, despite using a mask to reduce motion artefacts and keeping the acquisition settings the same as a previous good quality scan, could include patient movement during the scan, incorrect positioning of the patient, or technical issues with the CT scanner itself.”

**Difficulty of Question:** 3

**Thematic assignment:** Head and Neck

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**Genitourinary**

**34. Question:**

“What are the dose constraints for the testis in a patient age 65 years ? how does the age (and corresponding decline in testosterone production) affect the radiosensitivity of the testis (only considering hormonal production, not fertility) in concrete numbers?”

**Answer:**

“The dose constraint for the testis in a patient aged 65 years is 2.5-3 Gy. As men age, the production of testosterone declines, which can affect the radiosensitivity of the testis. However, the specific effect on hormonal production due to radiation is not quantifiable in concrete numbers.”

**Difficulty of Question:** 4.33

**Thematic assignment:** Genitourinary

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**35. Question:**

“Does a patient with breast cancer after breast conserving surgery, with one positive node from sentinel biopsy, but without an axillary dissection, need an adjuvant irradiation of the axilla?”

**Answer:**

“Yes, the patient should receive adjuvant irradiation of the axilla. This is because the presence of a positive sentinel lymph node indicates a higher risk of cancer spread to the axillary lymph nodes, and radiation therapy can help reduce this risk.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Genitourinary

**Evaluation (questioner reviewer):** 2 (Bad)

**Evaluation (second reviewer):** 3 (Acceptable)

**36. Question:**

“70 year old patient with light cell renal cell carcinoma on both sides right pt1a cN0 cM0 L0 V0 Pn0 G1 R0, left pT2a cN0 L0 V0 Pn0 G2 R0 presents to the urology consultation 2 years after a Da Vinci assisted partial kidney resection. A week ago, the CT thorax/abdomen showed a solitary, primarily metastasized, size-progressive lymph node. What are the next steps, what are the treatment options?”

**Answer:**

“The next steps for this patient would typically include further evaluation and treatment of the metastasized lymph node. Treatment options may include surgical resection, radiation therapy, or systemic therapy such as targeted therapy or immunotherapy, depending on the patient's overall health and other factors. It is important to discuss these options with the patient and develop an individualized treatment plan.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Genitourinary

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**37. Question:**

“Is hydronephrosis a potential problem in bladder sparing radiotherapy?”

**Answer:**

“Yes, hydronephrosis can be a potential problem in bladder sparing radiotherapy. It is a condition where there is a swelling of a kidney due to a build-up of urine. This can occur as a side effect of radiation therapy to the bladder area, which may cause obstruction of the ureters and lead to hydronephrosis.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Genitourinary

**Evaluation (questioner reviewer):** 1 (Very Bad)

**Evaluation (second reviewer):** 3 (Acceptable)

**38. Question:**

“What is the tri-modal therapy for bladder cancer?”

**Answer:**

“The tri-modal therapy for bladder cancer consists of transurethral resection of the bladder tumor (TURBT), chemotherapy, and radiation therapy.”

**Difficulty of Question:** 1.67

**Thematic assignment:** Genitourinary

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 5 (Very Good)

**Lung**

**39. Question:**

“Should Pembrolizumab be discontinued during radiotherapy of a lung metastasis? If so, how many half-lives before and after radiotherapy should Pembrolizumab be paused?”

**Answer:**

“Pembrolizumab should be discontinued during radiotherapy of a lung metastasis. It should be paused 3 half-lives before and after radiotherapy.”

**Difficulty of Question:** 3

**Thematic assignment:** Lung

**Evaluation (questioner reviewer):** 2 (Bad)

**Evaluation (second reviewer):** 3 (Acceptable)

**40. Question:**

“How would you recommend to treat a 60-year old patient with a newly diagnosed oligometastatic lung cancer (adeno-Ca; ALK+, PD-L1 30%; T3 N1 M1; 3rd right rib)?”

**Answer:**

“The recommended treatment for a 60-year old patient with newly diagnosed oligometastatic lung cancer (adeno-Ca; ALK+, PD-L1 30%; T3 N1 M1; 3rd right rib) would be a combination of systemic therapy and local therapy. Systemic therapy options include: 1. Targeted therapy with ALK inhibitors such as crizotinib, alectinib, or brigatinib. 2. Immunotherapy with pembrolizumab or nivolumab. 3. Chemotherapy with platinum-based doublet regimens. Local therapy options include: 1. Radiation therapy to the primary tumor site and metastatic lesions. 2. Surgical resection of the primary tumor and metastatic lesions if feasible. The choice of treatment will depend on various factors including the patient's overall health, performance status, and preferences. It is important to discuss the available options with the patient and develop an individualized treatment plan.”

**Difficulty of Question:** 2

**Thematic assignment:** Lung

**Evaluation (questioner reviewer):** 5 (Very Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**41. Question:**

“What techniques can be used to maximize treatment precision in peripheral lung lesions?”

**Answer:**

“Several techniques can be used to maximize treatment precision in peripheral lung lesions, including respiratory gating, image-guided radiation therapy (IGRT), and stereotactic body radiation therapy (SBRT). These techniques help to ensure accurate delivery of radiation to the tumor while minimizing damage to surrounding healthy tissues.”

**Difficulty of Question:** 2.67

**Thematic assignment:** Lung

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 3 (Acceptable)

**Other**

**42. Question:**

“Based on the pathogenesis of radiation-induced secondary cancers is it better to normofractionate (= single doses of around 2 Gy) or moderately hypofractionate (= single doses of around 3 Gy or higher) a patient with a Li-Fraumeni syndrome (p53 mutation) if radiotherapy has been deemed necessary?”

**Answer:**

“It is better to normofractionate a patient with Li-Fraumeni syndrome (p53 mutation) if radiotherapy has been deemed necessary. This is because normofractionation (single doses of around 2 Gy) is associated with a lower risk of radiation-induced secondary cancers compared to moderately hypofractionation (single doses of around 3 Gy or higher).”

**Difficulty of Question:** 3.67

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 2 (Bad)

**43. Question:**

“I have a patient with acute kidney failure where both prerenal and intrarenal aetiology are possible. How was it again possible to discern these two aetiologies based on the laboratory values (including sodium and kreatinin)?”

**Answer:**

“In prerenal acute kidney failure, the urinary sodium concentration is typically less than 20 mmol/L, while in intrinsic acute kidney failure, it is usually greater than 40 mmol/L. This difference can help distinguish between the two etiologies.”

**Difficulty of Question:** 3.33

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 2 (Bad)

**44. Question:**

“What is the life expectancy (median overall survival) for a patient that has refused the 5th line of chemotherapy after multifocal progression of his aggressive lymphoma (a PTLD) that was diagnosed 4 years ago and currently in an ECOG performance status of 1-2?”

**Answer:**

“The median overall survival for a patient with aggressive lymphoma who has refused further chemotherapy after multifocal progression is difficult to predict without specific details on the type and stage of lymphoma. However, generally, the prognosis for patients with aggressive lymphomas that have progressed after multiple lines of treatment is poor. It is important to consider individual patient factors, such as age, overall health, and response to previous treatments, in estimating life expectancy. It would be best to discuss this case with the patient's oncologist for a more accurate prediction.”

**Difficulty of Question:** 4.67

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**45. Question:**

“After how many days after starting Pregabalin for neuropathic pain should increase of dose be considered if pain response is insufficient?”

**Answer:**

“Dose escalation of Pregabalin for neuropathic pain should be considered after 3 days if the pain response is insufficient.”

**Difficulty of Question:** 3

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 4 (Good)

**Evaluation (second reviewer):** 4 (Good)

**46. Question:**

“In a patient with suspected tumorous mass in the area of C6 vertebra, a biopsy diagnosed a grade 3 chondrosarcoma. Subsequently, a two-stage resection was performed. However, after the second operation, a residual tumor remained in the area of the paravertebral muscles. The tumor board decided on adjuvant radiotherapy. What target dose should be aimed for? Should different doses be prescribed for different target volumes? Which organ-at-risk is the most relevant, and what constraint can be applied here?”

**Answer:**

“The target dose for adjuvant radiotherapy in this case should be 60-66 Gy. Different doses can be prescribed for different target volumes, with a higher dose for the gross tumor volume (GTV) and a lower dose for the clinical target volume (CTV) and planning target volume (PTV). The most relevant organ-at-risk in this case is the spinal cord, and a constraint of 45-50 Gy can be applied to it.”

**Difficulty of Question:** 3.33

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 1 (Very Bad)

**47. Question:**

“I have a 29 year old patient with a history of keloid formation at the right ear lobe after a piercing. In 2022 he received a resection with postoperative orthovolt radiotherapy of 4 x 4 Gy, total dose 16 Gy. Two years later, he now has a new keloid formation in the same location, planned for resection. What would be the ideal dose for repeat postoperative radiotherapy?”

**Answer:**

“The ideal dose for repeat postoperative radiotherapy for keloid formation after previous treatment is 3 x 5 Gy, total dose 15 Gy.”

**Difficulty of Question:** 3

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 2 (Bad)

**Evaluation (second reviewer):** 3 (Acceptable)

**48. Question:**

“For a mentoring programme, what would be issues specific to radiation oncology compared to other medical disciplines?”

**Answer:**

“Radiation oncology requires a strong understanding of radiation physics, dosimetry, and treatment planning. It also involves managing side effects specific to radiation therapy.”

**Difficulty of Question:** 4.33

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 5 (Very Good)

**Evaluation (second reviewer):** 4 (Good)

**49. Question:**

“How is weight loss grade 3 defined according to CTCAE v5.0?”

**Answer:**

“Weight loss grade 3 is defined as a loss of >20% of baseline body weight according to CTCAE v5.0.”

**Difficulty of Question:** 2

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 5 (Very Good)

**Evaluation (second reviewer):** 5 (Very Good)

**50. Question:**

“I have a patient with metastasized (peritoneal, liver, lung) pancreatic cancer at relatively young age (57 years). Re-staging after 4 cycles of FOLFIRINOX showed stable disease/mixed response. Should a) the treatment be switched to Immunotherapy and b) Should this patient and his familiy have genetic councelling and screening for HNPCC?”

**Answer:**

“a) The treatment should not be switched to immunotherapy based on the current information provided. b) Yes, this patient and his family should consider genetic counseling and screening for HNPCC (Hereditary Non-Polyposis Colorectal Cancer) due to the young age at diagnosis and the presence of metastatic disease.”

**Difficulty of Question:** 3.33

**Thematic assignment:** Other

**Evaluation (questioner reviewer):** 3 (Acceptable)

**Evaluation (second reviewer):** 3 (Acceptable)