Dear my colleagues

Thank you for your care to develop ourselves, these MCQ mainly consist of important questions repeated in MD exams and I collected from internet with addition of some questions from my knowledge. I am going to edit my book of MCQ which will contain more than 1000 questions in three levels making you ready for passing international exams as ESMO.

Till now, read these questions that resemble that of MD exam

Indeed I love all in my department and other SECI department and I wish to be the best place to treat cancer patients. This will be with GOD "ALLAH" willing to give us hardness and insistence in our work

With best wishes

Dr. Salah Mabrouk

Choose the one best and most appropriate answer

1. A male patient presented with increasing weight loss and abdominal pain. He had a past history of Coeliac Disease, which up until now was asymptomatic on a gluten free diet. CT of the abdomen revealed a thickened loop of small bowel with a stricture and associated lymphadenopathy. A trucut of the nodes revealed a malignant neoplasm, Diagnosis is:
   A. Maltoma
   B. Reactive lymphoid proliferation
   C. High grade B cell lymphom
   D. Enteropathic-associated T cell lymphoma
   E. Anaplastic large cell lymphoma

2. A 50 year old male presents with widespread lymphadenopathy. He has had recent fever and weight loss. A trucut biopsy reveals a malignant tumor with the following phenotype; Cytokeratin negative, CLA positive, CD3 positive, and CD30 positive
   A. Hodgkins disease mixed cellularity
   B. T-cell lymphoma
3. A 40 year old female presents with mediastinal hilar lymphadenopathy and she has recently noticed slight weight loss and a cough. Staging shows no other evidence of disease. A trucut biopsy reveals a lymphoma showing large cells with mirror image nuclei, lymphocytes, plasma cells and eosinophils. The following phenotype is seen; CD20 positive, CD3 negative, CLA positive, and CD15 positive
   A. Hodgkin's lymphoma, mixed cellularity
   B. Hodgkin's lymphoma, classical type
   C. Anaplastic large cell lymphoma
   D. Maltoma
   E. Reactive lymphoid proliferation

4. A 55 year old male presents with a history of chronic dyspepsia and with recent weight loss. Investigation by gastroscopy reveals a reduction in specialised gastric glands and the presence of slender giemsa staining filaments on the mucosal surface. In addition a gastric mass is seen. This is composed of large B lymphocytes which are negative for cyclin D1 and BCL2. Monoclonality is identified.
   A. Gastric DLBCL
   B. Anaplastic large cell lymphoma
   C. Maltoma
   D. Reactive lymphoid proliferation
   E. T-cell lymphoma.

5. A 28-year-old woman was found to have stage IV Burkitt’s lymphoma. Her renal function was normal and a staging CT scan had shown no abnormality of the renal tract. Three days later, when she was about to start chemotherapy, she developed a temperature of 39.0°C with rigors and was treated with imipenem. Investigations (the following day):
   serum sodium 138 mmol/L (137–144)
   serum potassium 6.2 mmol/L (3.5–4.9)
   serum creatinine 215 μmol/L (60–110)
serum corrected calcium 1.60 mmol/L (2.20–2.60)
serum phosphate 1.52 mmol/L (0.8–1.4)
serum lactate dehydrogenase 1238 U/L (10–250)
sodium urate 0.69 mmol/L (0.19–0.36)

What is the most likely cause of the renal impairment?
   A imipenem toxicity
   B intravenous contrast toxicity
   C kidney infiltration
   D septic shock
   E tumor lysis syndrome

6. A 67-year-old man in previously good health is hospitalized because of a 2-day history of fever and diminished consciousness. The patient responds inconsistently to verbal commands. His temperature is 39.5 °C (103.1 °F); he has tachycardia, and his blood pressure is 80/58 mm Hg. There is no bleeding. His hemoglobin is 12.1 g/dL, leukocyte count is 29,000/μL with 80% neutrophils, and platelet count is 20,000/μL. Which of the following studies should be obtained in this patient?
   A. Bone marrow aspiration and biopsy
   B. Factor VIII level
   C. Measurement of platelet-associated IgG
   D. Measurements of fibrin D-dimer and total fibrinogen
   E. Bleeding time

7. A 37-year-old man is hospitalized because of fever and right-sided chest pain. He has been having fatigue and recently developed dyspnea on exertion and intermittent chills. At the age of 29 years he was diagnosed with stage III Hodgkin’s disease and treated with multiagent chemotherapy and radiation therapy. A year ago, he developed mild anemia with no obvious cause. He takes thyroid hormone replacement when he remembers and has used fexofenadine as needed for allergic rhinitis for the past 5 years.
   On physical examination, his temperature is 38.7 °C (101.7 °F), pulse rate is 112/min, and blood pressure is 110/70 mmHg. There is dullness at the right lower lung and egophony. The hemoglobin is 8.5 g/dL, hematocrit is 26 %, leukocyte count is 2200/μL, and platelet count is 70,000/μL.
What is the most likely diagnosis?
A. Relapsed Hodgkin's disease
B. Sepsis
C. Hypothyroidism
D. Secondary myelodysplastic syndrome
E. Drug-induced bone marrow suppression

8. A 43-year-old man with severe acquired aplastic anemia has not responded to immunosuppressive agents. He remains neutropenic and transfusion-dependent for platelets and red cells. He has an HLA-identical brother who has been cleared as a donor for his planned allogeneic stem cell transplant. They are both cytomegalovirus-seronegative. Which of the following would be prevented by using irradiated cellular blood products for this patient?
A. Cytomegalovirus disease
B. Alloimmunization
C. Transfusion-related graft-versus-host disease
D. Febrile nonhemolytic transfusion reaction
E. Hemolytic transfusion reaction

9. A 34-year-old woman is evaluated because of progressive fatigue and recurrent attacks of abdominal pain. She weighs 61.2 kg (135 lb). Her pulse rate is 110/min and her blood pressure is 110/70 mm Hg. She is pale, and her spleen is palpable 4 cm below the costal margin.
Laboratory studies:
Hemoglobin 6 g/dL
Hematocrit 20%
Leukocyte count 2500/μL
Platelet count 80,000/μL
Reticulocyte count 10%
Blood smear Anisocytosis and polychromatophilia
Haptoglobin 0 mg/dL
Serum lactate dehydrogenase 645 U/L
There is high level of hemosiderin in the urine.
What is the most likely cause of this patients pancytopenia?
10. In an office visit for an annual checkup, a 46-year-old man reports that he has had malaise and intermittent sweats for the past few months but has been able to continue his job as a high school teacher. Two years ago he was treated for stage III diffuse large-cell non-Hodgkin’s lymphoma with six cycles of cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) and attained complete remission. He takes simvastatin for hypercholesterolemia and hydrochlorothiazide for hypertension. On physical examination, he has lymphadenopathy: a 3-cm right axillary node and a 2-cm right supraclavicular node. His spleen tip is palpable. Laboratory evaluation shows mild normochromic, normocytic anemia and an elevated serum lactate dehydrogenase level. CT scans of his chest and abdomen reveal additional mediastinal and retroperitoneal lymphadenopathy.

What is the best next step in this patient’s management?

A. A 2-week course of oral antibiotics
B. Referral for salvage chemotherapy and autologous stem cell transplantation
C. A repeat physical examination and CT scans in 3 months
D. Referral for treatment with investigational agents
E. A repeat course of CHOP

11. A 74-year-old woman presents for an urgent office visit. She has been experiencing epigastric discomfort over the last 3 months. Discomfort is worse during meals and prevents her from eating full portions. She has lost 5.4 kg (12 lb). She also reports dyspnea on exertion. She has been taking ramipril, aspirin, and simvastatin. On physical examination, her pulse rate is 88/min, and her blood pressure is 155/85 mm Hg. There is mild epigastric tenderness with palpation. Her spleen is massively enlarged and palpable at the umbilicus. The edge of her liver is also palpable 6 cm below the costal margin.

Her hemoglobin is 7.5 g/dL, mean corpuscular volume 89 fl, leukocyte count 11,200/μL, and platelet count 114,000/μL. Peripheral blood smear shows numerous...
erythroblasts, myeloid precursors, and teardrop cells. Bone marrow cannot be aspirated, and biopsy specimen shows marked fibrosis. Analysis of blood is negative for t(9;22) by fluorescent in situ hybridization (FISH).

What is the most likely diagnosis?
A. Chronic myeloid leukemia
B. Hairy cell leukemia
C. Myelodysplastic syndrome
D. Disseminated tuberculosis
E. Myelofibrosis

12. A 43-year-old man is evaluated because of crushing substernal chest pain that developed during a pickup basketball game with colleagues at work. He was treated 15 years ago for stage IIB massive mediastinal Hodgkin’s disease. Treatment included doxorubicin, bleomycin, vinblastine, and dacarbazine (ABVD) followed by mantle-field radiation therapy to a total dose of 4400 cGy. He has had no recurrence of his Hodgkin’s disease. He takes thyroid medication because he developed hypothyroidism 2 years after completing his therapy for Hodgkin’s disease.

What is the most likely diagnosis?
A. Recurrent Hodgkin’s disease
B. Myocardial infarction
C. Pulmonary fibrosis
D. Anemia associated with secondary myelodysplasia evolving to acute leukemia
E. Constrictive pericarditis

13. A 68-year-old man is evaluated because of worsening chronic epigastric pain. He now has fatigue and early satiety. He has iron deficiency anemia. Results of upper gastrointestinal endoscopy reveal diffuse gastritis, along with mucosal thickening in the gastric antrum associated with a mass lesion. Abundant Helicobacter pylori organisms are noted on biopsy, and histologic evaluation of the mass lesion shows it to be a gastric lymphoma of mucosa-associated lymphoid tissue (MALT) type.

What is the most appropriate next step in the management of this patient’s illness?
A. Combination chemotherapy with 5-fluorouracil, doxorubicin, and mitomycin C (FAM)
B. Combination chemotherapy with cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP)
14. A 64-year-old man is evaluated because of fatigue and shortness of breath on exertion. He has had three episodes of urinary tract infection in the past 7 months. On physical examination, he has pallor but is otherwise normal. He denies blood loss, and his stool is negative for occult blood on three measurements. He is anemic (hemoglobin 8.4 g/dL) with normochromic, normocytic indices, and his serum creatinine level is 2.9 mg/dL. The total serum protein level is elevated, and the serum albumin level is low normal. His serum calcium level is 11.8 mg/dL.
What is the most likely cause of his symptoms?
A. Multiple myeloma
B. Chronic pyelonephritis
C. Iron deficiency anemia
D. Colon cancer
E. Small-cell lung cancer

15. Regarding lymphomas, all are true except:
A. Mesenteric nodes are involved in HL more than in NHL
B. Nodal extension is contiguous in HL
C. Extranodal disease is common in NHL
D. Testicular lymphoma is the most common testicular tumor in people aged over 60 years
E. Bone marrow is common extranodal site for lymphomatous involvement

16. B cell CLL
A. Thrombocytopenia often autoimmune
B. Reduced immunoglobulins are a risk for recurrent bacterial infections
C. Stage A disease should be treated with chemotherapy
D. Late transformation to ALL occur in the majority of patients
E. Diffuse infiltration of bone marrow indicates good prognosis

17. Which one of the following statements is true of B cell CLL?
A. Autoimmune thrombocytopenia is uncommon
B. Reduced immunoglobulins a risk of recurrent viral infections
C. Stage A disease should be treated with chemotherapy
D. Late transformation to ALL occur in the majority of patients
E. Diffuse infiltration of bone marrow indicates good prognosis

18. Which of the following associations is correct?
A. Renal transplantation and Non-Hodgkin's lymphoma
B. Hepatitis B and aplastic anaemia
C. Turner's syndrome and acute myeloid leukaemia
D. Basophilia and chronic myeloid leukaemia
E. Crohn's disease and TB

19. Which of the following statements regarding lymphomas in childhood is correct?
A. Hodgkin's disease is more common than non-Hodgkin's under the age of 5 years.
B. Hodgkin's disease has equal sex incidence.
C. Lymphocyte-predominant Hodgkin's disease has the worse prognosis.
D. The nodular sclerosing variety is the most common form of Hodgkin's disease.
E. The most common presenting clinical sign is splenomegaly.

20. Malignant melanoma:-
A. is the commonest form of skin cancer
B. is always related to acute sun exposure
C. always arises in a pre-existing pigmented naevus
D. is common in the pre-pubertal age group
E. typically shows metastases to regional lymph nodes

21. A 68-year-old woman is evaluated because of a lump on her chest wall. Seventeen years ago she developed stage I ductal adenocarcinoma (estrogen receptor-positive) of the left breast; her disease was managed with lumpectomy, breast radiation therapy, and 5 years of tamoxifen therapy.
The lump she now has is separate from the breast, subcutaneous in location, fixed to the underlying 4th rib, and nontender. The mass is excised and found to be a fibrosarcoma.
What is the relationship of this fibroscarcoma to her original cancer and its treatment?
A. It is not related to the original cancer or its treatment
B. It is related to the radiation therapy given to control the breast cancer
C. It is related to the tamoxifen given to control the breast cancer
D. It is related to the primary estrogen receptor-positive breast cancer

22. A 70-year-old man with an 80-pack-year smoking history is evaluated because of a chronic cough of 6 months duration. Chest radiograph shows a 3-cm mass in the left perihilar region, and bronchoscopic biopsy confirms poorly differentiated adenocarcinoma. There are no significant findings on physical examination, and all blood studies are normal. Bone scan and CT scan of the head are normal, but CT scans of the chest and abdomen show the mass and two 1-cm nodules in the right lobe of the liver. Intravenous contrast perfusion of the two nodules during the CT scan is not suspicious for hemangioma. Positron emission tomography scan shows distinct uptake in the left perihilar mass but only faint focal activity in the right lobe of the liver. Pulmonary function tests show mild obstructive disease. What is the best next step in this patient’s management?
A. Radiation therapy
B. Chemotherapy
C. CT-directed liver biopsy
D. Serum carcinoembryonic antigen test
E. Surgery

23. A 25-year-old woman has her first routine check-up. Her mother died of lung cancer at the age of 60 years, and her father has had a head and neck cancer. She is very worried about getting cancer and wants to know what she can do to reduce her risk, as much as possible, of getting either of these cancers. In addition to avoidance of tobacco, which of the following approaches has been demonstrated to decrease risk for one or both of these cancers?
A. Avoidance of alcohol abuse
B. Daily intake of antioxidant vitamins
C. Avoidance of exposure to benzene
D. Daily intake of β-carotene
24. A 69-year old black man is evaluated because of a history of steadily increasing upper abdominal pain, loss of appetite, and a 4.6-kg (10-lb) weight loss over the past several months. He recently noticed that the color of his urine was darker than usual. The patient had a 40-pack-year history of cigarette smoking, but quit smoking 4 years ago. He has hypertension that is controlled by medical management.

Laboratory studies:
- Hemoglobin 11.5 g/dL
- Serum total bilirubin 3.3 g/dL
- Serum albumin 3.2 g/dL
- Serum aspartate aminotransferase 105 U/L
- Serum alanine aminotransferase 95 U/L

Urinalysis shows elevated bilirubin. CT scan of the abdomen shows dilation of the common bile and pancreatic ducts, a 5.2-cm mass in the head of the pancreas, and compression of the superior mesenteric vein. A fine-needle aspirate of the mass reveals atypical cells that are suspicious for malignancy.

What is the most appropriate course of action?
A. Refer the patient for exploratory laparotomy, biopsy, and biliary bypass
B. Request a CT-guided biopsy of the mass in the head of the pancreas to establish a diagnosis
C. Obtain a consultation for endoscopic retrograde cholangiopancreatography and possible biopsy and biliary stent placement
D. Refer the patient to a tertiary-care center with surgical expertise in the management of patients with pancreatic and hepatobiliary disease

25. Which of the following cancer screening tests has been shown in randomized trials to decrease the risk of death from the target cancer?
A. Fecal occult blood testing every 2 years for colorectal cancer
B. Human papillomavirus DNA test for cervical cancer every year
C. Pap smear of the cervix every year in sexually active women for uterine cancer
D. Chest radiography every year in cigarette smokers for lung cancer

26. A 45-year-old woman is evaluated because of a palpable 2-cm right axillary lymph node. The lymph node is completely resected, and histologic study shows adenocarcinoma; hormone receptors are negative. Bilateral mammography is negative,
as is MRI of the right breast. CT scans of the chest and abdomen are negative for tumor, and no further lymphadenopathy is detected. Results of bone scan and MRI of the head are also unremarkable. The patient had been previously healthy and has never smoked.

Which of the following statements about this patients condition is correct?
A. Breast cancer is the most likely diagnosis, and optimal therapy for breast cancer paradigm should be initiated.
B. Lung cancer is the most likely diagnosis, and optimal therapy for lung cancer paradigm should be initiated.
C. All known disease has been resected, and the patient requires careful monitoring for possible future recurrence.
D. Radiation therapy to the right axilla is required with fields encompassing the right breast.

27. A 59-year-old man was referred because of a change in bowel habit. He had noticed no alteration in stool calibre, gastrointestinal bleeding or unintended weight loss. There was no family history of colonic polyps or gastrointestinal malignancy.
Physical examination was normal. A rectal examination revealed no masses. A sigmoidoscopy revealed a 4-mm polyp in the mid-rectum, which was removed with forceps, and histology revealed a tubular adenoma.
What is the most appropriate next step in management?
A. barium enema now
B. colonoscopy in 3 years
C. colonoscopy in 5 years
D. colonoscopy now
E. sigmoidoscopy in 1 year

28. A 42-year-old woman is evaluated because she has noticed a thickening in her left breast over the past few weeks. She noticed it a few months ago, but because it seems to come and go, she put off seeking medical attention.
She is premenopausal. She had menarche at age 13 years. When she was 35 years, she had one child (whom she breast-fed) after a normal first full-term pregnancy. She took oral contraceptives for 10 years before her pregnancy. She has no known radiation exposure and no family history of breast cancer.
On physical examination, there appears to be some asymmetry in breast tissue density in the upper outer quadrant of the left breast compared with the right one, but no discrete mass. There are no palpable lymph nodes. Results of a mammogram are negative.

What would be the most appropriate next step in this patient's management?
A. Breast ultrasound; consultation with a surgeon experienced in breast diagnosis
B. Reassurance that because her family history is negative and the mammogram is negative, no additional studies or treatment is required
C. MRI of the breast
D. Measurement of circulating tumor markers, including CA15-3 and carcinoembryonic antigen

29. A 26-year-old man with testicular cancer who is receiving chemotherapy is evaluated in the emergency department. His temperature is 38.9 °C (102 °F), and he complains of feeling flushed and tired. He has an indwelling central venous port, but there are no localizing symptoms to suggest a source of infection. Chest radiograph shows no abnormalities.

The patient's hemoglobin is 8.9 g/dL; the absolute neutrophil count is 165/μL and the platelet count is 56,000/μL. Results of other laboratory studies and urinalysis are within normal limits. Blood samples are obtained from a peripheral vein and through the port and sent for culture; a urine culture is also ordered. The patient is hospitalized and intravenous ceftazidime is initiated.

Three days later, the patient's temperature is 37.8 °C (100 °F) and absolute neutrophil count is 4504/μL; his clinical condition is otherwise stable. Results of blood and urine cultures are negative. A repeat chest radiograph is normal, and blood and urine specimens are again sent for culture.

What is the most appropriate treatment strategy for this patient?
A. Continue the current antibiotic regimen
B. Add vancomycin
C. Switch to oral ciprofloxacin and amoxicillin-clavulanic acid
D. Add granulocyte colony-stimulating factor
E. Remove the central venous port
30. Four years ago, a 67-year-old man had a serum prostate-specific antigen (PSA) level of 16 ng/mL. Biopsy specimen showed adenocarcinoma of the prostate gland. His Gleason score was 7. He was treated with external-beam radiation therapy. One month ago, the patient noted fatigue and rib pain. His PSA was found to be 87 ng/mL, and bone scan revealed diffuse metastatic disease. What is the best treatment for this patient?
A. Chemotherapy with docetaxel
B. Chemotherapy with mitoxantrone and prednisone
C. Androgen ablation (medical or surgical)
D. Radiation therapy with strontium-89

31. A 68-year-old woman is evaluated because of rectal bleeding that began recently and a sense of fullness in the rectum. Flexible sigmoidoscopy shows a mass 11 cm from the anus, and biopsy reveals adenocarcinoma. The patient is referred to a colorectal surgeon, and a low anterior resection is performed. The primary tumor, a 4-cm moderately differentiated adenocarcinoma, penetrates the bowel wall. No lymph nodes are involved. What is the most appropriate next step in this patient's management?
A. No chemotherapy or radiation therapy; annual flexible sigmoidoscopy
B. Postoperative adjuvant chemotherapy and pelvic radiation therapy
C. Postoperative pelvic radiation therapy
D. Complete colonoscopy within the first year, repeated every 3 to 5 years

32. A 58-year-old postmenopausal woman has been taking hormone replacement therapy with combined estrogen and progestin for the past 4 years because she was told it would decrease her risk for heart disease. Her father died at age 65 years of heart disease, and she is concerned that she is also at risk. Recently, her sister has been diagnosed with breast cancer. Her mother died of breast cancer. Three years ago, the patient had a breast biopsy that showed atypical hyperplasia. She has not had a hysterectomy. The patient is considering chemoprevention for breast cancer, but is nonetheless concerned about heart disease. Her calculated risk of breast cancer is 10.4% over the next 5 years. Which of the following options is reasonable to consider for this patient?
MCQ Bank

Dr. Salah Mabrouk Khallaf

A. Continue hormone replacement therapy alone for primary prevention of heart disease
B. Continue hormone replacement therapy and add tamoxifen
C. Discontinue hormone replacement therapy and start tamoxifen
D. Change her hormone replacement therapy to estrogen alone and add tamoxifen

33. A 68-year-old man with locally advanced non-small-cell lung cancer is evaluated because of the new onset of low back pain over the past 2 weeks. It is relieved with ibuprofen, and his only other symptom is mild fatigue. The patient completed combined chemotherapy and radiation therapy 6 months ago, and restaging scans afterward showed marked shrinkage of the right perihilar mass. He has no muscle weakness. Plain radiograph of the thoracic and lumbar spine shows no abnormalities other than signs of mild osteoarthritis. Neurologic examination is unremarkable. What is the most appropriate next step in the management of this patient?
A. Gallium scan
B. Re-evaluation if the symptoms get worse
C. CT scan of the chest and abdomen with bone windows of the spine
D. MRI of the spine
E. Intravenous dexamethasone and MRI of the spine

34. A 72-year-old man is evaluated because of constipation, abdominal pain, and distention that have worsened over the past week. Two years ago, he was diagnosed with stage III rectal cancer (primary tumor and renal involvement) and underwent low anterior resection. Chemotherapy with 5-fluorouracil and leucovorin followed, and pelvic radiation was given with concurrent infusion of 5-fluorouracil. He has been having regular bowel movements, and results of his most recent colonoscopy (1 year ago) were unremarkable. On physical examination, his pulse rate is 100/min. He has orthostatic hypotension, a slightly distended abdomen with hyperactive bowel sounds, and some guarding to deep palpation in the left lower quadrant. Plain radiograph of the abdomen shows distended loops of small bowel, with no stool in the distal colon or rectum. The patient is hospitalized for bowel rest and intravenous hydration. What is the next step in this patient’s management?
A. Complete colonoscopy
B. Upper gastrointestinal series with small-bowel follow-through
C. Positron emission tomography scan of the abdomen
D. Measurement of serum carcinoembryonic antigen
E. CT scan of the abdomen with oral and intravenous contrast

35. A 60-year-old postmenopausal woman at elevated risk for breast cancer is taking tamoxifen to reduce her risk. She has not had a hysterectomy. Which of the following surveillance strategies for the detection of endometrial cancer is most important to incorporate into this patient’s care?
A. Annual transvaginal ultrasound
B. Annual transabdominal pelvic ultrasound
C. Annual endometrial aspiration sampling
D. Biennial dilatation and curettage
E. Annual routine bimanual pelvic examination

36. An 82-year-old woman who has never smoked is evaluated because of a persistent cough. Chest radiograph shows several lung nodules and infiltrates. There are no significant findings on physical examination. The patient reports no weight loss. Blood studies show no abnormalities. CT scans confirm pulmonary involvement only, and results of bone scan and CT scan of the head are normal. The patient most likely has which of the following histologic types of lung cancer?
A. Bronchoalveolar cell carcinoma
B. Small-cell lung cancer
C. Large-cell carcinoma
D. Squamous cell carcinoma
E. Carcinoid tumor

37. A 45-year-old woman has recently undergone lumpectomy and radiation therapy for a stage II breast cancer. She received chemotherapy for 6 months. Her periods ceased while she was receiving chemotherapy, and she remains amenorrheic. Her tumor was rich in estrogen receptor, and she is taking tamoxifen. Her hair is growing back, her energy is returning, and she has no specific complaints, but she is worried about recurrence. In addition to routine follow-up, what is the most appropriate management of this patient?
A. Positron emission tomography now and annually
B. No further management
C. Routine tumor marker evaluation every 3 to 4 months (serum CA1-5, carcinoembryonic antigen)
D. Bone scan and annual CT of the chest, abdomen, and pelvis
E. Estrogen replacement therapy

38. A 66-year-old black woman diagnosed with stage III colon cancer underwent definitive resection of the primary tumor 3 years ago. After surgery, she received adjuvant chemotherapy with 5-fluorouracil and leucovorin.
Approximately 20 months later, she developed metastatic disease in the liver (five lesions in right and left lobe) and lungs (one lesion in the right and left lobe). She was treated with irinotecan, 5-fluorouracil, and leucovorin, and had a partial response to therapy.
One month ago, disease progression was documented on restaging CT scans. The patient’s laboratory studies show relatively normal organ function. She has fatigue, decreased appetite, and has noticed a 2.3-kg (5-lb) weight loss over the past 3 months.
She has stopped participating in weekend bike trips with a cycling club, but remains involved in church and family activities and states that she wants to be as aggressive as possible in fighting the cancer.
What is the most reasonable recommendation for this patient?
A. Metastatectomy
B. Hepatic arterial infusion
C. Second-line chemotherapy regimen with leucovorin and oxaliplatin
D. High-dose chemotherapy with autologous peripheral stem cell transplantation

39. A 65-year-old woman has a modified radical mastectomy for a 1.0-cm, well-differentiated breast cancer. The tumor is positive for estrogen and progesterone receptors and negative for HER2. Sentinel node mapping and excision show that none of the three lymph nodes removed is positive for metastasis. She is otherwise healthy.
What is the best treatment for this patient at this time?
A. Chest wall radiation therapy and tamoxifen for 5 years
B. Chest wall radiation therapy and anastrozole for 5 years
C. Tamoxifen for 5 years
D. Tamoxifen and anastrozole for 5 years

40. A 59-year-old woman with an 80-pack-year smoking history is evaluated because of weight loss and severe pain in the upper part of her left leg. She has lost 11.3 kg (25 lb) from baseline weight of 59 kg (130 lb). A large lytic lesion is noted on the left femur, with erosion into the cortex. Bone scan shows multiple lesions, and CT scan of the chest shows a large left hilar mass and mediastinal lymphadenopathy. Bronchoscopic biopsy specimen shows poorly differentiated adenocarcinoma. Radiation therapy to the left femur is initiated.

Which of the following findings would preclude use of palliative chemotherapy for this patient?
A. A solitary liver metastasis with normal serum bilirubin level
B. Multiple liver metastases with a serum bilirubin level of 3.0 mg/dL
C. A cytologically positive pleural effusion
D. Hypercalcemia
E. Poor performance status

41. A 57-year-old man has tried to stop smoking unsuccessfully for the past year. He has tried smoking cessation counseling and use of nicotine gum. Although he has no new symptoms, the “smokers cough” that he has had for years is a constant reminder that he is at risk of dying of lung cancer. He wants to know what measures he can take that have been shown to reduce that risk.

In addition to a smoking cessation program, what is the best recommendation for this patient?
A. Daily dietary supplementation with the antioxidant l3-carotene
B. Daily isotretinoin, titrated to limit skin toxicity
C. Daily bupropion
D. An annual low-dose spiral CT scan of the chest
E. Sputum cytology every 4 months

42. A 71-year-old man with mild chronic obstructive pulmonary disease and mild hypertension is evaluated during an annual routine visit. Review of systems is notable for intermittent cough, increasing dyspnea on exertion, a 2.3-kg (5 lb) weight loss, and fatigue. The patient takes aspirin, 81 mg/d, and hydrochlorothiazide, 50 mg/d orally. He
smoked one pack of cigarettes per day for 49 years but quit smoking 2 years ago. On physical examination, distant breath sounds are audible in both lungs and there are scattered rhonchi. Chest radiograph shows a perihilar mass. Abnormal laboratory results include hemoglobin of 12.5 g/dL and a serum sodium of 127 meq/L. Endobronchial biopsy reveals small-cell lung cancer. Further staging studies suggest that the disease is limited-stage.

What is the most appropriate treatment for this patient’s hyponatremia?

A. Fluid restriction to 1 L/d
B. Fluid restriction to 1 L/d and demeclocycline therapy
C. Discontinuation of hydrochlorothiazide
D. Combination chemotherapy for the small-cell lung cancer

43. A 23-year-old man is evaluated because of a painless right-sided scrotal mass. Ciprofloxacin, 500 mg every 12 hours, is administered for 10 days, but he notes little improvement in the swelling. His serum α-fetoprotein level is elevated at 100 ng/mL, and his 13-human chorionic gonadotropin level is 64 m/UL/mL. Testicular ultrasound examination reveals a hypoechoic mass.

Which of the following would be the most appropriate next step in his treatment?

A. Retroperitoneal lymph node dissection
B. Combination chemotherapy with bleomycin, etoposide, and cisplatin
C. Radiation to the pelvis
D. Inguinal orchiectomy

44. A 40-year-old woman has a routine gynecologic examination. At the age of 32 years, she gave birth to twins after receiving fertility drugs. She has just seen a television program on ovarian cancer, and is concerned because previous use of fertility drugs and a family history of ovarian cancer were mentioned as possible risk factors. Her mother developed endometrial cancer at 56 years, and a paternal uncle was diagnosed with a type of lymphoma at 60 years. She has one older sister with hypertension and one younger brother who is healthy. Results of her pelvic examination are unremarkable, but she asks what additional tests she should have to look for ovarian cancer in the early stages that cannot be detected by physical examination.

What is the most appropriate management for this patient?

A. Blood test for CA-125
B. Rectovaginal pelvic examination in 1 year
C. Transvaginal ultrasound
D. Screening test for BRCA-1 and BRCA-2

45. A 44-year-old woman has a lumpectomy and radiation therapy for stage II breast cancer. She receives 6 months of chemotherapy. Her periods cease while she is receiving chemotherapy, and she remains amenorrheic. Her tumor was found to be rich in estrogen receptor, and she is taking tamoxifen. Her hair is growing back and her energy is returning, but she is having severe hot flushes that keep her awake at night. She is so tired during the day that she is unable to perform her job in a satisfactory manner. She also relates that she and her husband have been unable to have satisfying sexual relations because intercourse is painful for her.

What would be the most appropriate treatment for this patient?
A. A selective serotonin reuptake inhibitor and use of nonhormonal vaginal lubricating preparations
B. Reassurance that these normal physiologic responses to menopause will resolve in time
C. Estrogen replacement therapy with a progesterone supplement
D. Work-up for endometrial cancer because she is taking tamoxifen

46. A 64-year-old white man presents for serum prostate-specific antigen (PSA) screening at his wife’s urging. He is in generally good health, except for mild hypertension. His digital rectal examination reveals a mildly enlarged prostate gland with no discrete nodules. He has no family history of prostate cancer.

What is the best advice to give him?
A. There is no evidence that PSA screening leads to the earlier detection of prostate cancer
B. There is insufficient evidence to establish whether PSA screening affects overall mortality rates
C. On the basis of his lack of symptoms it is unlikely that he has an elevated PSA
D. Because a digital rectal examination is more sensitive than a serum PSA test, his
normal examination makes it unlikely that he has cancer

47. A 58-year-old woman with a 60-pack-year smoking history is evaluated because of hemoptysis and weight loss. Chest radiograph and CT scan show a right perihilar mass with mediastinal adenopathy. The results of CT scans of the abdomen, bone scan, and MRI of the head are otherwise negative. Examination of a specimen by bronchoscopic biopsy confirms small-cell lung cancer, and the findings suggest limited-stage disease. After the patient completes mediastinal radiation therapy and four cycles of cisplatin and etoposide, repeat CT scans indicate that her disease is in complete remission.

What is the best recommendation concerning further therapy?
A. Prophylactic cranial irradiation
B. Four more cycles of chemotherapy, including a taxane
C. Resection of the localized disease
D. No further therapy; follow-up only

48. A 63-year-old man is evaluated because of a several-month history of increasing fatigue and some vague upper abdominal discomfort. His medical history includes gastroesophageal reflux disease, coronary artery disease, and clinical depression, all of which are well controlled with medications. The patient has been working full time. On physical examination, he has mild hepatomegaly. His hemoglobin is 12.2 g/dL, serum alkaline phosphatase level 280 U/L, and serum aspartate aminotransferase level 65 U/L. CT scan of the abdomen and pelvis shows multiple hepatic lesions ranging in size from 1 cm to 4 cm; mesenteric, para-aortic, and paracaval lymphadenopathy, and a colonic mass at the splenic flexure. Colonoscopy reveals a nonobstructing, non bleeding lesion; biopsy shows it to be poorly differentiated adenocarcinoma. Fine-needle aspiration of one of the liver lesions confirms the presence of malignant cells consistent with a primary colon cancer.

What is the most appropriate next step in the management of this patient?
A. Resection of the primary tumor followed by systemic chemotherapy
B. Combined regional chemotherapy to the liver and systemic chemotherapy
C. Exploratory laparotomy with resection of the primary tumor and placement of a hepatic arterial infusion pump
D. Systemic chemotherapy
49. A 69-year-old man underwent a radical prostatectomy ii years ago. His serum prostate-specific antigen (PSA) level was 7.1 ng/mL, clinical stage was Tic (clinically organ-confined and detected by screening PSA blood test only), and his Gleason score was 5.

His PSA level became detectable 4 years ago. Over the past 3 years, his PSA values have been 1.4 ng/mL, 1.8 ng/mL, and 2.2 ng/mL. He remains asymptomatic, and a recent bone scan revealed only degenerative disease.

The patient’s risk for rapid metastasis is low for which of the following reasons?
A. He was initially treated by radical prostatectomy.
B. His PSA level became undetectable.
C. He has had a slow, prolonged rise in his PSA.
D. He is almost 70 years old.

50. A 61-year-old man with a 120-pack-year smoking history is evaluated for a persistent and worsening cough and found to have a 3-cm mass in the right upper lobe on chest radiography. CT-directed needle biopsy is positive for squamous cell carcinoma. CT scans of the abdomen and pelvis, bone scan, and MRI of the head are negative for metastatic disease. Positron emission tomography scan shows uptake only in the right upper lobe mass, and pulmonary function tests indicate that the patient has adequate pulmonary reserve to undergo resection.

The patient undergoes a right upper lobectomy. All margins are clear, and all peribronchial lymph nodes are negative for tumor within the resected specimen.

What is the most reasonable adjuvant therapy for this patient?
A. Four cycles of combination chemotherapy including a taxane
B. Four cycles of combination chemotherapy including a taxane, followed by radiation therapy to the draining lymph node sites in the mediastinum
C. Radiation therapy to the draining lymph node sites in the mediastinum
D. Six cycles of combination chemotherapy including a platinum agent
E. No radiation therapy or chemotherapy is required at this time

51. A 47-year-old woman is recovering from surgery for stage III ovarian cancer (spread to the peritoneal cavity but without parenchymal liver involvement). Not all of the visible
cancer could be resected; the largest residual tumor was 3 cm in diameter. Her performance status is excellent. She is interested in pursuing aggressive therapy and wishes to be treated as soon as possible in her local community. The proposed systemic therapy will involve cisplatin or carboplatin and paclitaxel. What further treatment is appropriate for this patient?

A. No further treatment beyond the proposed standard therapy
B. Another drug that has a different mechanism of action
C. Regional peritoneal therapy
D. High-dose therapy with peripheral or bone marrow stem cell rescue
E. A second-look laparotomy

52. A 62-year-old postmenopausal woman with a family history of breast cancer in two first-degree relatives wishes to consider taking tamoxifen to reduce her risk of breast cancer. Her baseline risk of breast cancer qualifies her for consideration of tamoxifen (i.e., an absolute risk of at least 1.66% over the next 5 years). She has had a prior hysterectomy, but her ovaries are intact. Which of the following effects of tamoxifen are relevant to the decision?

A. Decreased risk of myocardial infarction or ischemic heart disease
B. Increased risk of deep venous thrombosis
C. Increased risk of ovarian cancer
D. Increased risk of major depression
E. Increased risk of colorectal cancer

53. A 50-year-old perimenopausal woman is evaluated because of abdominal swelling. CT scan of the chest, abdomen, and pelvis shows mesenteric lymphadenopathy and a small amount of ascites but no ovarian masses. Needle biopsy specimen shows adenocarcinoma; the tumor is found to be negative for hormone receptors. The serum carcinoembryonic antigen level is normal at 2.0 ng/mL and the serum CA-125 is 1200 ng/mL (elevated). What is the best next step in her treatment?

A. Combination chemotherapy
B. Debulking surgery
C. Radiation therapy to a wide port
D. Positron emission tomography scan to assess other sites of disease
E. Bone scan to rule out skeletal metastases

54. A 50-year-old menstruating woman has a 1.5-cm moderately differentiated breast cancer. The lesion is completely excised, and the margins of the excision are negative. Axillary node sampling shows that she has three positive nodes. The tumor is negative for estrogen and progesterone receptors and is highly positive for HER2. She is otherwise healthy.

Her mother had breast cancer at 62 years and was treated by mastectomy; she is alive and healthy at the age of 80 years. The patient’s sister had breast cancer at 54 years and was treated by breast conservation therapy; 4 years later she died of a recurrence of breast cancer.

The patient has seen two different surgeons with opposing viewpoints regarding the best treatment, and she has been reading extensively on the Internet and has become confused about her options.

Which of the following represents the best treatment for this patient?
A. Modified radical mastectomy, followed by tamoxifen and chemotherapy
B. Chemotherapy with no further treatment to the breast
C. Chemotherapy and tamoxifen, with no further treatment to the breast
D. Chemotherapy and radiation therapy to the breast and axillary regions
E. Chemotherapy, tamoxifen, and radiation therapy to the breast and axillary regions

55. A 32-year-old woman is evaluated because of a painless swelling in her lower neck. She noted the swelling about 3 weeks ago and now thinks it is getting larger. She has no history of foreign travel. She smokes but does not drink alcohol. She owns a cat. She has not had fever or unexplained weight loss, but has had night sweats twice in the past week. She has been feeling fatigued lately and has noted dyspnea on exertion.

On physical examination, a 3 X 5-cm left supraclavicular lymph node is palpable. It is firm but not rock-hard and is nontender. The remainder of her physical examination and results of a complete blood count are normal.

What is the best next step in this patient’s management?
A. Observe for 2 weeks
B. Refer her to an otolaryngologist for a thorough search for a primary lesion of the oropharyngeal mucosa
C. Administer oral antibiotics and observe the course of the node
D. Perform a needle aspiration of the node
E. Perform a chest radiograph

56. A 63-year-old man is evaluated because of new-onset hemoptysis and a 100-pack-year smoking history. Chest radiograph shows a 4-cm right perihilar mass, and bronchoscopic biopsy and cytologic evaluation of sputum confirm squamous cell carcinoma. There are no significant findings on physical examination, and the patient reports no weight loss. Complete blood count is normal except for a serum alkaline phosphatase level at 110 U/L. CT scans of the chest and abdomen show no mediastinal adenopathy. Results of a positron emission tomography scan are negative, except for the right perihilar mass. In which of the following situations would surgical therapy be offered?
A. A solitary bone metastasis is noted on bone scan, and a lytic lesion is confirmed radiographically.
B. A solitary liver metastasis is noted on CT scan and confirmed by needle biopsy and positron emission tomography scan.
C. A solitary brain metastasis is noted on CT scan of the head.
D. A small effusion is noted in the right hemithorax, and cytopathologic examination of the pleural fluid is positive for tumor.

57. A 40-year-old woman was treated for breast cancer 5 years ago by lumpectomy, breast irradiation, and 3 months of chemotherapy. Her original cancer was negative for estrogen and progesterone receptors and unequivocally positive for HER2. Her periods stopped during chemotherapy but resumed 4 months later, and she remains premenopausal now. She is evaluated now because of pain in her back, a nagging cough, and fatigue. Physical examination shows palpable skin nodules over the affected breast, axillary adenopathy, and dullness to percussion, and decreased breath sounds in the base of the left lung; her liver edge is palpable below the right costochondral border. Liver function values are approximately twice normal; serum bilirubin is normal. Radiograph of the chest shows multiple pulmonary nodules and a left pleural effusion confirmed by CT, which also shows the liver nodules. Bone scan and MRI are consistent with bone metastases. Biopsy of one of the skin lesions is consistent with metastatic breast cancer; it is negative for estrogen and progesterone receptors, and
positive for HER2. What is the most appropriate treatment for this patient?
A. Hospice care and comfort measures
B. Combination endocrine therapy with tamoxifen and an aromatase inhibitor
C. High-dose chemotherapy with bone marrow stem cell support
D. Trastuzumab and taxane-based chemotherapy
E. Combination endocrine therapy with ovarian ablation and an aromatase inhibitor

58. A 65-year-old man has a routine screening examination, and his serum prostate-specific antigen (PSA) level is found to be 6.7 ng/mL. Digital rectal examination reveals a mildly enlarged prostate gland, but no discrete nodules. One year ago, his PSA was 2.1 ng/mL. The patient is referred to a urologist who performs a biopsy of the gland. Biopsy specimen shows adenocarcinoma of the prostate with a Gleason score of 9. Which of the following best describes his prognosis on the basis of his Gleason score?
A. The Gleason score is not reproducible and should not be used as a prognostic variable.
B. Because the patient is asymptomatic, the Gleason score will not be predictive of outcome.
C. The Gleason score indicates that the patient would have a high risk of recurrence after a radical prostatectomy.
D. The Gleason score indicates that the patient would have a very low risk of recurrence after radiation therapy.

59. A 78-year-old man is evaluated because of shortness of breath of acute onset. The patient reports a 13.6-kg (30-lb) weight loss, vague upper abdominal discomfort, nausea, loss of appetite, and fatigue. He has hypertension and symptomatic atherosclerotic coronary artery disease despite optimal medical management. Even before the recent episode of dyspnea, his physical activity has been limited; he spends most of the day resting either in bed or in a chair. Laboratory studies:
Hemoglobin 10.5 g/dL
Serum albumin 2.6 g/dL
Serum alanine aminotransferase 65 U/L
Serum aspartate aminotransferase 78 U/L
CA 19-94500 U/L
Arterial oxygen saturation 85% by pulse oximetry
Spiral CT scan of the chest shows a pulmonary embolism. The patient is hospitalized for anticoagulation and oxygen therapy and gradually improves. Subsequent CT of the abdomen shows a 4-cm mass in the tail of the pancreas and numerous low-attenuation lesions in the liver. CT-guided biopsy of the hepatic lesions and the pancreatic mass is deferred during this hospitalization.
What is the most appropriate next step in the management of this patient?
A. Best supportive care and referral to a hospice
B. Diagnostic CT-guided biopsy under a heparin window” when the patient's clinical status improves
C. Neurolytic celiac axis block
D. Palliative chemotherapy
E. Palliative radiation therapy

60. A 76-year-old man was diagnosed with prostate cancer 8 years ago. At that time he had a serum prostate-specific antigen (PSA) level of 12 ng/mL, a Gleason score of 6, and a clinical stage of T2b (organ-confined on digital rectal examination but involving both lobes of the prostate gland). He was treated with external-beam radiation therapy, and his PSA level dropped to a low of 1.4 ng/mL. Four years later, his PSA level began to rise and now is 14.1 ng/mL. A recent bone scan and CT scans revealed no metastatic disease. His urologist has suggested initiating a course of leuprolide. Which of the following is a potential side effect of leuprolide that the patient should be informed about before commencing therapy?
A. Impaired urinary flow
B. Bone thinning
C. Weight loss
D. Increased hair growth

61. A 68-year-old man with a 60-pack-year smoking history is evaluated because of hemoptysis. Radiograph of the chest shows a right hilar mass and mediastinal widening. CT scans of the chest and abdomen confirm the hilar mass and bulky lymphadenopathy in the mediastinum with no other overt metastases. Bronchosopic biopsy specimen shows small-cell lung cancer. Bone scan and CT scan of the head are negative for tumor. A low serum sodium level and inappropriately high urine osmolality
suggest that he has the syndrome of inappropriate antidiuretic hormone secretion. Which of the following is the most appropriate treatment recommendation?

A. Surgery followed by chemotherapy
B. Radiation therapy followed by chemotherapy
C. Chemotherapy alone
D. Radiation therapy and concomitant chemotherapy
E. Chemotherapy followed by radiation therapy

62. A 78-year-old woman with metastatic breast cancer involving the bones and soft tissues who has been taking hormone replacement therapy is evaluated in the emergency department because of lethargy and weakness, nausea, thirst, and dizziness. She is orthostatic and clinically dehydrated. She has a history of congestive heart failure that has been controlled with medications. Laboratory studies:

Blood urea nitrogen 42 mg/dL
Total serum calcium 11.4 mg/dL
Serum creatinine 1.6 mg/dL
Serum albumin 3.0 g/dL

What is the most appropriate initial treatment?

A. Slow rehydration with half-normal saline
B. Intravenous administration of a bisphosphonate
C. Vigorous rehydration with normal saline
D. Intravenous administration of furosemide along with saline rehydration
E. Intravenous administration of corticosteroids

63. A 52-year-old woman who is a nonsmoker has a 3-cm right inguinal lymph node. Biopsy specimen shows a poorly differentiated malignancy that is difficult to characterize by light microscopy. The biopsy specimen is negative for leukocyte common antigen, cytokeratin, and estrogen receptors.

Which of the following additional tests would best establish the source of this tumor?

A. Bone scan
B. Measurement of serum carcinoembryonic antigen
C. Stain for S-100
D. Measurement of serum CA 19-9

64. A 59-year-old man who is a heavy smoker presents with cough, shortness of breath, and a sensation of head fullness. Physical examination is notable for cervical venous distention and facial edema. A chest radiograph shows a widened superior mediastinum.

What is the most appropriate initial intervention for this patient?
A. Initiation of radiation therapy while a diagnostic work-up is pursued
B. CT of the chest and consultation with a pulmonologist and a thoracic surgeon
C. CT of the chest and a venous dye study to rule out thrombosis of the superior vena cava
D. Mediastinoscopy with biopsy
E. Ventilation/perfusion scan

65. A 29-year-old man was diagnosed with stage II (that is, spread from the primary tumor to retroperitoneal lymph nodes) nonseminomatous germ cell tumor 1 year ago. Treatment included orchiectomy and retroperitoneal lymph node dissection. He now presents with an elevated level of β-human chorionic gonadotropin hormone and multiple pulmonary lesions ranging in size from 0.61 to 3.22 cm. Needle biopsy specimen of the largest lesion reveals a germ cell tumor consistent with the initial diagnosis. He is asymptomatic.

What is the best treatment for this patient?
A. Surgical resection of the lung lesions
B. Combination chemotherapy with bleomycin, etoposide, and cisplatin
C. Radiation therapy to the chest
D. Watchful waiting

66. A 64-year-old woman has the following family history: One sister, who was a smoker, had lung cancer at the age of 63 years; another sister had breast cancer at the age of 70 years. Her father had prostate cancer at 82 years of age, and her mother had breast cancer at age 71 years. She has three other sisters, now aged 58, 60, and 65 years who have no history of cancer. She has two daughters and two sons between the ages of 25 and 39 years, who have no history of cancer. Her ancestry is European in general, and she is not of known Ashkenazi Jewish descent. She is concerned that “cancer runs
in the family” and would like to have one of those “gene tests” she has read about. What is the best advice to give her and her family?

A. Have blood testing for abnormalities in known germ-line tumor suppressor genes (such as BRCA-1 and BRCA-2).

B. Encourage her children to have genetic counseling and testing for abnormalities in known germ-line tumor suppressor genes.

C. Advise her children to start routine cancer screening tests immediately, including mammography, colonoscopy or sigmoidoscopy, and prostate-specific antigen testing.

D. Advise her that genetic testing is unnecessary, and recommend that she and her family continue screening and risk-reduction strategies as recommended for the general population.

E. Recommend bilateral prophylactic mastectomies and oophorectomies for her and her daughters.

67. A 72-year-old man is evaluated because of back pain and fatigue. Laboratory values indicate he is anemic, with normal leukocyte count and platelet count. He has mild hypercalcemia and a normal serum creatinine level. His gamma globulins are elevated, and serum protein electrophoresis shows the presence of a monoclonal protein, an IgG-K light chain containing immunoglobulin at 4.4 g/dL. His bone marrow contains 20% plasma cells. A skeletal survey reveals multiple osteolytic lesions in the spine, ribs, and skull. Therapy with melphalan and prednisone is initiated.

Which of the following agents would NOT be routinely used in his management?

A. Erythropoietin

B. Radiation therapy

C. Intravenous gamma globulin

D. Adequate analgesia (including narcotics, if necessary)

E. A bisphosphonate

68. Which of the following statements is correct about alpha-feto protein (AFP)?

A. Moderately elevated AFP is almost diagnostic of hepatocellular carcinoma.

B. Hepatitis cannot give rise to raised AFP.

C. Lectin-binding AFP is not a tumor-specific marker.

D. Hook effect can explain the apparently normal level of AFP in hepatoblastoma.

E. AFP should not be raised in germ cell tumor.
69. Which of the following statement about tumor markers is correct?
   A. Carcino-embryonic antigen (CEA) is a tumor-specific marker in colorectal cancer.
   B. CEA is mainly used for determining prognosis and detecting relapse.
   C. Human chorionic gonadotrophin (hCG) cannot be used to screen gestational trophoblastic disease in patients with molar pregnancy.
   D. Raised hCG in peri-menopausal and post-menopausal women is always abnormal.
   E. Phantom hCG is detected in gestational trophoblastic disease.

70. A 58-year-old man presents with weight loss and haemoptysis. He has smoked most of his life. On examination he is clubbed and has clinical evidence of right pleural effusion. His serum calcium is 3.2mM. Which of the following histological type of lung cancer is he most likely to suffer from?
   A. mesothelioma
   B. small cell carcinoma
   C. large cell carcinoma
   D. squamous cell carcinoma
   E. adenocarcinoma

71. Which of the following is an oncogene?
   A. The N-Myc gene
   B. The WT1 (first Wilm's tumor) gene
   C. The Retinoblastoma gene
   D. The WT2 (second Wilm's tumor) gene
   E. The BCRabl translocation (Philadelphia chromosome)

72. Which of the following does not have a role in the management of chronic cancer pain?
   A. Carbamazepine
   B. Clodrinate
   C. Dexamethasone
   D. Nifedipine
   E. Pinavarium
73. A 64-year-old man is found to have squamous cell bronchogenic carcinoma. Which of the following statements is true regarding surgical resection?
A. An FEV1 of 2 L is a major contraindication to surgical resection.
B. Hypercalcaemia makes further assessment for surgery unnecessary.
C. Is precluded if a CT scan of the thorax shows enlarged mediastinal lymph nodes.
D. Positive sputum cytology excludes the need for bronchoscopic examination of the airways.
E. The presence of finger clubbing indicates that liver metastases are already present.

74. An elderly lady with breast cancer is starting diamorphine elixir for painful bony metastases. Which of the following is the most appropriate comment to make to her caregiver.
A. Sedation is likely to be an ongoing problem with diamorphine.
B. If pain relief is not adequate cocaine may need to be introduced.
C. A laxative will need to be used.
D. Dependence on diamorphine is likely and could cause problems.
E. The same dose could be given IM to achieve the same effect.

75. A 45-year-old woman noticed tinnitus in her left ear which progressed over some weeks to hearing loss in that ear. On physical examination she is found to have a marked decrease in hearing on the left, with Rinne test indicating air conduction better than bone conduction. The other cranial nerves I - VII and IX - XII are intact. A brain MRI scan revealed a solitary, fairly discreet, 3 cm mass located in the region of the left cerebellopontine angle. Which of the following statements is most appropriate to tell the patient regarding these findings?
A. A test for HIV-1 is likely to be positive.
B. Other family members should undergo MR imaging of the brain.
C. Remissions and exacerbations are likely to occur in coming years.
D. The lesion can be resected with a good prognosis.
E. You are unlikely to survive for more than a year.

76. A 48-year-old woman presents to her GP with Cushingoid facies and hyperpigmentation of the skin on her face and chest. She has smoked 20 cigarettes per year for 30 years. Examination reveals no gross abnormalities. Her chest X-ray reveals
a 2 cm irregularly shaped mass in the right upper lobe, in proximity to the mediastinum. A CT guided needle biopsy of the lung lesion is performed. Which would be the most likely cytologic finding?

A. Adenocarcinoma  
B. Benign bronchial adenoma  
C. Bronchoalveolar cell carcinoma (BAC)  
D. Small cell (oat cell) carcinoma  
E. Squamous cell carcinoma

77. A firm 2 to 3 cm mass is palpable in the upper outer quadrant of the right breast of a 52-year-old woman. There are no palpable axillary lymph nodes. A lumpectomy with axillary node dissection is performed and the breast lesion is found to have positive immunohistochemical staining for HER2/neu (c-erb B2). Staining for oestrogen and progesterone receptors is negative. Which of the following additional treatment options is most appropriate, based upon these findings?

A. Radical mastectomy  
B. St John's wort  
C. Tamoxifen  
D. Trastuzumab  
E. Vancomycin

78. Concerning Neurofibromatosis Type 1 (NF1), which one of the following statements is true?

A. Bilateral acoustic neuromas are common  
B. Clinical severity in individuals is similar in a given family  
C. New mutations occur rarely  
D. Pigmented spots on the iris are a characteristic feature  
E. The diagnosis is likely if two café-au-lait patches are present

79. Regarding retinoblastoma which of the following statements is correct?

A. Bilateral involvement is found in 70% of cases.  
B. The predisposition may be inherited as an autosomal dominant condition.  
C. There is an increased risk of autoimmune disease.  
D. They have often metastasised by the time of diagnosis.
80. Which of the following regarding salivary gland pleomorphic adenomas is correct?
   A. they are the most common salivary gland tumor
   B. are commoner in the sub-mandibular than the parotid gland
   C. in the parotid gland most commonly arise medial to the facial nerve
   D. are more common in males than in females
   E. typically enhance following intravenous contrast injection in CT

81. A 65-year-old man, with a history of smoking, presents with chronic cough, haemoptysis and weight loss. His Chest X-Ray shows a cavitating lesion. What is the likely diagnosis?
   A. adenocarcinoma
   B. alveolar cell carcinoma
   C. large cell carcinoma
   D. small cell carcinoma
   E. squamous cell carcinoma

82. In asbestos related disorders which of the following statements is correct?
   A. basal fibrotic shadowing on CXR suggests coincidental idiopathic fibrosing alveolitis
   B. increased incidence of primary lung cancer
   C. pleural effusion develops more than 20 years after causative asbestos exposure
   D. pleural plaques are recognized precursors of mesothelioma
   E. the risk of malignant mesothelioma is greatly increased in smokers compared with non-smokers

83. Carcinoid tumors of the lung (bronchial adenomas) originate from which of the following cell types?
   A. Ciliated cell
   B. Clara cell
   C. Kulchitsky (K) cell
   D. Mucus (goblet) cell
   E. Type 2 Alveolar cell
84. A 75-year-old man with squamous cell carcinoma is thought to have resectable disease. Which of the following would be a contraindication to surgery?
   A. clubbing
   B. FEV1 of 0.75 L
   C. his age of 75 years
   D. pleural effusion
   E. Syndrome of Inappropriate ADH

85. A 59-year-old female smoker is diagnosed with oat cell carcinoma of the bronchus. Which of the following relating to this diagnosis is true?
   A. The tumor is likely to be radiosensitive
   B. occurs with equal frequency in smokers and non-smokers
   C. has a 5 year survival greater than 20%
   D. Is associated with the elaboration of ectopic ADH secretion
   E. Is typically associated with ectopic parathormone secretion.

86. Mutations of the p53 gene frequently occur in:
   A. Huntingdon's Disease
   B. Type 2 Diabetes Mellitus
   C. Cystic fibrosis
   D. Bronchial Carcinoma
   E. Colonic polyps

87. A 30-year-old woman has a right mastectomy and axillary lymph node dissection for a carcinoma diagnosed by fine needle aspiration cytology. The histologic pattern is that of a poorly differentiated carcinoma that is negative for oestrogen and progesterone receptors, but is positive for HER2/neu. One axillary lymph node demonstrates micrometastases. Her 32 year old sister is found to have a similar lesion. Which of the following statements regarding risk factors for this lesion is the most appropriate?
   A. A history of late menarche is likely to be present in females in this family
   B. Fibrocystic changes were present for many years
   C. She had a history of exposure to hydrocarbon compounds
   D. She has a positive antinuclear antibody test
   E. These findings suggest a BRCA-1 mutation
88. A 56-year-old woman is recently diagnosed with small cell carcinoma of the lung. Which of the following non-metastatic manifestations is she most likely to develop?
   A. myasthenia gravis
   B. Eaton-Lambert syndrome
   C. ectopic PTH-related peptide secretion
   D. erythema gyratum repens
   E. hypertrophic pulmonary osteoarthropathy (HPOA)

89. In which of the following cases of lung cancer would surgical resection of the tumor be a reasonable therapeutic option?
   A. A 56-year-old woman with an adenocarcinoma of the right lung. CT scan shows enlarged lymph nodes in the right and left hilum. PFTs show an FEV1 of 2.25 L. (55% predicted).
   B. A 59-year-old man who is found at bronchoscopy to have a tumor in the right mainstem bronchus extending to within 1 cm of the carina. Pulmonary Function Tests (PFTs) show an FEV1 of 2.1 liters (65% of predicted normal).
   C. A 62-year-old lady with a small peripheral mass who has elevated liver enzymes and a computed tomography (CT) scan showing probable metastatic deposits in the liver PFTs show an FEV1 of 3.5 Liters (80% of predicted normal).
   D. A 70-year-old man with a right lower lobe tumor 2 cm in diameter with no evidence of regional adenopathy or distant spread of disease. PFTs show an FEV1 of 0.8 Liters (28% predicted).
   E. A 71-year-old man with a 3 cm tumor obstructing the right lower lobe bronchus. PFTs show an FEV1 of 1.98 L. (43% predicted).

90. 26- A 60-year-old man was diagnosed last year with adenocarcinoma of the lung, and a 4 cm mass lesion was treated with a right lower lobectomy. He now has an abdominal CT scan that reveals scattered hepatic mass lesions and hilar lymphadenopathy. For several weeks, he has had increasing malaise. A urinalysis reveals marked proteinuria, and a 24 hour urine protein collection is 2.7 g/24hr. His serum urea is 30 mmol/L (2.5 - 7.5) with creatinine of 450 µmol/L (60 - 110). A renal biopsy is performed, and there is focal deposition of IgG and C3 with a granular pattern. He is most likely to have which of the following conditions?
A. Goodpasture's syndrome
B. Membranous glomerulonephritis
C. Minimal change glomerulonephritis
D. Nodular glomerulosclerosis
E. Rapidly progressive glomerulonephritis

91. A 56-year-old man from Thailand presented with abdominal pain and a mass in the right upper quadrant. He reported that he had been diagnosed with viral hepatitis several years previously. Investigations showed: Serum alpha-fetoprotein 13,500 IU/L (< 10) What is the most likely underlying viral infection?
A. Hepatitis A virus
B. Hepatitis B virus
C. Hepatitis C virus
D. Hepatitis D virus
E. Hepatitis E virus

92. A 64-year-old man has terminal cancer with hepatic metastases. He is treated with oral morphine (Oramorph) solution for pain relief. Which is the most important pharmacodynamic factor in determining the appropriate timing between doses?
A. bioavailability
B. first pass metabolism
C. gastric emptying
D. plasma half-life
E. renal clearance

93. A 51-year-old woman has had several syncopal episodes over the past year. Each episode is characterized by sudden but brief loss of consciousness. She has no chest pain. She has no ankle edema. On brain MRI there is a 1.5 cm cystic area in the left parietal cortex. A chest X-ray shows no cardiac enlargement, and her lung fields are normal. Her serum total cholesterol is 6.5 mmol/L. Which of the following cardiac lesions is she most likely to have?
A. Cardiac amyloidosis
B. Ischemic cardiomyopathy
C. Left atrial myxoma
D. Mitral valve prolapse
E. Tuberculous pericarditis

94. Which of the following statements regarding prognosis in lung cancer is true?
   A. Combined modality therapy (chemotherapy, radiation therapy and surgery) has improved overall lung cancer survival to 40% at 5 years.
   B. Overall lung cancer survival is < 15% at 5 years.
   C. Patients undergoing radiation therapy have a 5 year survival of 40%.
   D. Patients who qualify for surgery have a 50% 5 year survival.
   E. With chemotherapy, overall survival in small cell (oat cell) carcinomas has risen to 60% at 5 years.

95. A 45-year-old man develops facial swelling and breathlessness. His chest X-ray reveals paratracheal lymphadenopathy. Which of the following statements is most accurate regarding the superior vena caval obstruction?
   A. the most common cause is squamous cell carcinoma
   B. treatment of choice is radiotherapy
   C. it may be associated with voice hoarseness
   D. it is associated with Kussmaul's sign
   E. the commonest symptom is stridor

96. A 52-year-old woman presented with hot flushes. Her last menstrual period had been 1 year previously. She was treated with ethinylestradiol and medroxyprogesterone acetate.
   Which potential consequence of oestrogen therapy is most reduced by co-prescription of a progestogen?
   A. breast cancer
   B. breast pain
   C. endometrial cancer
   D. mood changes
   E. weight gain
97. A 44 years old female with breast lump of one year duration, slowly progressed, examination revealed right inner lower quadrant mass with normal both axillae, biopsy revealed a benign nature with average risk to develop cancer, this pathology is mostly
A. Sclerosing adenosis
B. Fibrocystic disease
C. Hyperplasias with atypia increases the risk of developing invasive breast cancer by:
D. Papillomas
E. Lobular carcinoma in situ

98. Which of the following is associated with a GH secreting pituitary tumor
A. Gs alpha subunit mutation
B. Pit-1 mutation
C. H-ras mutation
D. Rb 1 mutation
E. p53 mutation

99. 33- Which ONE of the following statements regarding colon cancer is correct:
A. In non-familial cases, gene mutations in the cancer cells are unusual
B. In familial cases the inheritance pattern is typically autosomal recessive
C. It occurs most commonly in the ascending colon
D. It is a characteristic feature of the Peutz-Jegher syndrome
E. In familial polyposis coli the increased cancer risk is due to inheritance of a mutated suppressor gene

100. The following are recognized features of Pancoast's tumor except:
A. ipsilateral Horner's syndrome
B. wasting of the dorsal interossei
C. pain in the arm radiating to the fourth and fifth fingers
D. erosion of the first rib
E. weakness of abduction at the shoulder

101. Which of the following concerning diamorphine elixir for the relief of pain in terminal patients is correct?
A. Analgesia is enhanced if cocaine is added
B. Constipation is a characteristic sequel to treatment
C. Dependence occurs rapidly
D. initial sedation typically continues whilst the drug is administered
E. the same amount of pain relief is produced as when the same dose is given via intramuscular injection

102. In a case of Dysgerminoma of ovary tumor markers is likely to be raised. one of the following
A. Serum HCG
B. Serum alphafetoprotein
C. Serum lactate dehydrogenase
D. Serum inhibin

103. The most common pure germ cell tumor of the ovary is:
A. Chriocarcinoma
B. Dysgerminoma
C. Embryonal cell tumor
D. Malignant Teratoma

104. The highest incidence of Gestational Trophoblastic Disease is in:
A. Australia
B. Asia
C. North America
D. Western Europe

105. According to the FIGO staging of gestational trophoblastic tumors, a lady with choriocarcinoma having lung metastasis will belong to which stage
A. I
B. II
C. III
D. IV

106. A patient with non-metastatic gestational trophoblastic disease can be treated with weekly intramuscular injections of which of the following agents?
A. Cyclophosphamide
B. Carboplatin
C. Etoposide
D. Actinomycin D
E. Methotrexate

107. Five-year survival rates of patients with low-risk, non-metastatic gestational trophoblastic disease approaches?
   A. 100%
   B. 75%
   C. 50%
   D. 25%
   E. 5-10%

108. Comparing complete hydatidiform moles gestations, complete hydatidiform mole gestations are more likely than partial moles to demonstrate all of these characteristics except?
   A. More likely to require chemotherapy after evacuation for gestational trophoblastic disease
   B. more likely to present with a uterus large for dates
   C. more likely to present with theca lutein cysts
   D. more likely to have focal rather than diffuse trophoblastic proliferation
   E. more likely to have diffuse hydopic swelling of villi

109. A woman experiencing a molar pregnancy has an increased risk of which of the following in subsequent gestations?
   A. Stillbirth
   B. Prematurity
   C. Congenital malformations
   D. Recurrent molar gestation
   E. Cancer later in life

110. The most likely karyotype of patient with a complete mole would be?
   A. 46, XX
B. 46, XY
C. Diandric triploidy
D. Triploidy with two haploid sets of maternal origin
E. Aneuploidy

111. The most likely karyotype for patient with a partial mole would be ?
A. 46, XX
B. 46, XY
C. Diandric triploidy
D. Triploidy with two haploid sets of maternal origin
E. Aneuploidy

112. A woman with a complete mole is most likely to present with which of the symptoms?
A. Vaginal Bleeding
B. Excessive uterine size
C. Hypermesis
D. Pre-eclampsia
E. Prominent theca lutein cysts

113. A patient with a complete mole is found to have sizeable ovarian cysts that are presumed to be theca lutein cysts. All of the following are true about theca lutein cysts EXCEPT?
A. Such cysts arise more frequently in patients with complete moles
B. Theca lutein cysts are more likely seen in patients with very high hCG levels
C. Cysts are filled with serious or serosanguinous fluid and are usually bilateral
D. Often require active management with surgical intervention
E. Patients with large theca lutein cysts may be at increased risk for postmolar persistence of disease

114. Regarding gestational trophoblastic disease (GTD), all are true except
A. Incomplete moles are more likely to undergo malignant change than the complete moles
B. GTD is almost always completely curable with preservation of fertility
C. Lymphnode involvement is a rare feature of choriocarcinoma
D. GTD usually shows low resistance blood flow
E. It is rare to have other metastasis in the absence of lung metastasis

115. Risk of Malignancy in Adenomatous polyp is related to all except
   A. Size
   B. Number
   C. Histological appearance
   D. Dysplasia

116. Polyps are generally managed endoscopically. Which of the following is not an indication for resectional surgery
   A. Lymphovascular invasion
   B. Poor differentiation
   C. Flat or ulcerated lesion
   D. Lesion in upper 1/3rd of submucosa

117. Which of the following is not true for malignancy of Familial Adenomatous Polyposis
   A. Adrenals
   B. Thyroid
   C. Astrocytomas
   D. Hepatoblastomas

118. What is not true for HNPCC
   A. It is the most common hereditary colorectal cancer syndrome in USA
   B. It is associated with MMR gene mutation
   C. It is associated with APC mutation
   D. It is associated with carcinoma colon and extraintestinal cancers
   E. Answer C and D are correct

119. True about Ulcerative Colitis with malignancy
   A. It has a better prognosis
   B. Is related to disease activity
   C. Is related to duration of ulcerative colitis
D. Malignancy is more in anorectal ulcerative colitis  
E. All of above

120. In ulcerative colitis with toxic megacolon lowest rate of recurrence is seen in  
A. Complete proctocolectomy and Brook's ileostomy  
B. Ileo rectal anastomoses  
C. kock's pouch  
D. none of above

121. All are precancerous for carcinoma colon except  
A. Crohn's disease  
B. Bile acids  
C. Fats  
D. Carotene

122. Which of these genetic risk factors has the highest association with colon cancers  
A. Sporadic  
B. Past family history of colo rectal cancer  
C. Hereditary Nonpolyposis colon cancer (HNPCC)  
D. Familial Adenomatous Polyposis (FAP)

123. After total proctocolectomy with ileal pouch anal anastomoses what is the most common cause of death in patients with Familial Adenomatous Polyposis (FAP)  
A. Gastric cancer  
B. Periampullary carcinoma  
C. Genito urinary cancers  
D. Recurrence of colorectal cancer

124. Most valuable investigation for preoperative evaluation of extensive corrosive stricture is  
A. Endoscopic ultrasound  
B. Barium study  
C. CT Thorax  
D. Pharyngoscopy
125. Not an association between (PSC) Primary sclerosing cholangitis and Ulcerative colitis (UC)
   A. Inflammatory Bowel disease (IBD) seen in 70% of patients with PSC
   B. Diagnosis of IBD occurs 8-10 years before PSC
   C. Colitis is severe in patients with both PSC And UC as compared to UC alone
   D. Risk of colon cancer is more when patients have both UC and PSC as compared to UC alone

126. Which is the most accurate method of detecting colon cancer
   A. Fecal occult blood
   B. PET/CT
   C. Sigmoidoscopy
   D. Colonoscopy
   E. Digital examination

127. What is the most appropriate treatment for T3 colon cancer
   A. Surgery alone
   B. Chemotherapy alone
   C. Radiotherapy alone
   D. Surgery plus chemotherapy
   E. Supportive care only

128. Radiotherapy is indicated in
   A. aT3 colon cancer
   B. T2 colon cancer
   C. T3 rectal cancer
   D. T1 rectal cancer
   E. T1 colon cancer

129. Concerning small intestinal fistulae, all the following are true EXCEPT:
   A. A fistula may have a high output or a low output depending on its site.
   B. High output fistulae occur in the upper small bowel.
   C. Low output fistulae occur in the ileum.
D. Isotonic saline should be used to replace intravascular and interstitial volume in high output fistulae
E. The lower the fistula the higher the fluid and nutrient loss.

130. Concerning colonic polyps:
A. Polyposis means the presence of hundreds of polyps, usually in the small intestine.
B. Pedunculated polyps are more likely to become malignant than sessile ones.
C. Villous adenomas are associated with hyperkalaemia.
D. Metaplastic polyps commonly become malignant.
E. Most adenocarcinomas arise within pre-existing adenomas.

131. A 45 years old male with bilateral breast cancer with his mother developed breast cancer when aged 34 years and his sister developed ovarian cancer at age 50 years. The most likely genetic mutation for this patient is/are
A. BRAC1
B. BRCA2
C. ATM
D. APC
E. Answer A and B are correct

132. A 45 years old female with right sided breast cancer with no family history suggesting familial cancer.
The most likely genetic mutation for this patient is/are
A. BRAC1
B. BRCA2
C. ATM
D. APC
E. Answer A and B are correct

133. Chromosomal 17 has many genes implicated in molecular criteria of breast cancer including these genes EXCEPT:
A. BRCA-1
B. HER-2
C. P53
D. ATM
E. Answer B and D are correct.

134. Concerning adenomatous polyps, all the following are true EXCEPT:
   A. They may cause anaemia
   B. They may cause diarrhea
   C. They occur mainly in the ileum
   D. They may initiate an intussusception
   E. They have a malignant potential

135. Familial polyposis coli
   A. is inherited as autosomal recessive
   B. is more common in male
   C. cancer develops after the age of 50 in untreated patients
   D. polyps develop throughout the colon and rectum early in the second decade of life
   E. the responsible gene is on the long arm of chromosome 6

136. Gardner's syndrome is associated with all the following EXCEPT:
   A. multiple colorectal adenomas
   B. sebaceous and dermoid cysts
   C. adenomas of the mandible or skull
   D. desmoid tumors of the abdominal wall
   E. no malignant potential

137. All the following may predispose to colorectal cancer EXCEPT:
   A. Familial adenomatous polyposis
   B. High fibre, low fat diets
   C. Ulcerative colitis
   D. Schistosomal colitis
   E. Exposure to irradiation
138. Genes implicated in the pathogenesis of colorectal cancer include all the following EXCEPT:
   A. Ki-ras gene
   B. c-myc gene
   C. APC gene
   D. BRCA1 gene
   E. P53 gene.

139. The carcinoid syndrome is likely to occur with carcinoid tumors:
   A. of the appendix
   B. localized to the ileum
   C. both
   D. neither

140. Carcinoid tumors (argentaffinomas) are characterized by all of the following except:
   A. many are multiple especially in the ileum
   B. can occur in alimentary, biliary and respiratory tracts
   C. may produce systemic symptoms when accompanied by liver metastases
   D. appendix is the most common site
   E. appendiceal types have greatest malignant potential

141. Primary carcinoma is least common in:
   A. esophagus
   B. stomach
   C. small intestine
   D. colon

142. Which is most characteristic of carcinoma of the cecum or right colon (in contrast to carcinoma of the rectum)?
   A. anemia
   B. associated polyposis
   C. bowel obstruction
   D. diarrhea
143. In which of the following segments of the gastrointestinal tract is primary carcinoma least common?
   A. esophagus
   B. stomach
   C. small intestine
   D. colon
   E. mouth

144. Bilateral ovarian metastases presenting as tumor masses are most characteristically associated with carcinoma of the:
   A. esophagus
   B. stomach
   C. small intestine
   D. appendix
   E. colon

145. The worst prognosis is associated with carcinoma of the:
   A. esophagus
   B. stomach
   C. small intestine
   D. colon

146. Diffuse intramural spread with extensive fibroblastic thickening is a morphologic pattern most characteristically associated with carcinoma of the:
   A. esophagus
   B. stomach
   C. small intestine
   D. appendix
   E. colon

147. Carcinoid tumors have a varied malignant potential. The most benign are located in the:
   A. stomach
   B. small intestine
C. rectum
D. appendix

148. Which of the following characterizes the biologic nature of carcinoid tumors (argentaffinomas)?
   A. benign but produce systemic symptoms
   B. production of systemic symptoms when they metastasize to the liver
   C. especially malignant when primary in the appendix
   D. production of jejunal ulceration due to gastrin elaboration

149. In the colon, which is benign and has no significant tendency to undergo malignant transformation?
   A. familial polyposis
   B. juvenile polyp
   C. villous adenoma
   D. carcinoid tumors

150. Carcinoma of the esophagus:
   A. produces symptoms early and is more curable than carcinoma of the stomach
   B. is difficult to cure because of local spread
   C. is characterized by early widespread metastases
   D. is usually undifferentiated

151. Carcinoma of the esophagus has a poor prognosis because:
   A. metastases to liver or lung are usually present before the diagnosis is made
   B. the lesion is not accessible to surgery
   C. local spread usually prevents complete removal
   D. the tumor is radioresistant

152. All of the following correctly describe carcinoma of the esophagus except:
   A. male predominance
   B. most frequently involves adenocarcinoma
   C. patients usually over 50 years of age
   D. most frequently of the squamous cell type
E. symptoms may occur late in the disease

153. Which of the following is most characteristic of carcinoma of the esophagus?
A. produces symptoms early and is more curable than cancer of the stomach
B. difficult to cure because of local spread
C. characterized by widespread and early metastases
D. has a good response to chemotherapy and therefore is rarely excised or radiated

154. The most common type of esophageal cancer in the United States is:
A. adenocarcinoma
B. leiomyosarcoma
C. lymphoma
D. squamous cell carcinoma

155. What is the significance of intestinal metaplasia in the stomach or colon?
A. It has no significance.
B. It is frequently associated with mildly precancerous inflammatory disease.
C. It is highly precancerous.
D. It is usually associated with heterotopic pancreas.

156. Multiple recurrent ulcers in proximal and distal duodenum for several years are likely to be associated with:
A. heavy aspirin intake
B. islet cell adenoma of pancreas
C. smoking
D. excessive bile secretion

157. In a patient with a chronic peptic ulcer of the stomach, the chance that carcinoma will develop in the ulcer is:
A. over 80%
B. about 50%
C. about 30%
D. very small
158. Carcinoma of the stomach usually arises from:
   A. smooth muscle cells
   B. acid producing cells
   C. pepsinogen producing cells
   D. mucus producing cells
   E. argentaffin cells

159. Which presents as a bulky mass lesion often with deep central ulceration?
   A. leiomyoma of stomach
   B. leiomyosarcoma of stomach
   C. both
   D. neither

160. Lymphoma of the stomach:
   A. may be primary or secondary in the stomach
   B. has a better prognosis than carcinoma of the stomach
   C. both
   D. neither

161. Which neoplasm is most FREQUENTLY found in the appendix?
   A. carcinoid
   B. villous adenoma
   C. lymphoma
   D. adenomatous polyp
   E. adenocarcinoma

162. The most benign examples of carcinoid tumor usually are found in the:
   A. colon
   B. appendix
   C. ileum
   D. stomach

163. Which type of polyp is most LIKELY in a patient presenting with watery mucoid diarrhea?
A. juvenile polyp
B. adenomatous polyp
C. villous adenoma
D. carcinomatous polyp

164. Familial breast cancer is characterized by
A. Account for about 20% of all breast cancer
B. A BRCA1 mutation is the most common genetic changes.
C. Associated cancers tend to be more aggressive, of a higher grade, and hormone receptor negative.
D. Follow the same rules of screening as non-familial breast cancer.
E. All of above.

165. A bulky tumor of the rectum exhibits a delicate, velvety, easily bleeding surface. It has no pedicel and its base appears to be as wide as its apex. The process is most probably:
A. inflammatory polyp
B. villous adenoma
C. mucinous adenocarcinoma
D. lymphoid polyp
E. leiomyoma

166. Which is characterized by small size?
A. adenomatous polyp
B. hyperplastic polyp
C. villous adenoma
D. juvenile polyp

167. Which best characterizes Peutz-Jeghers polyps?
A. solitary, hamartomatous, not premalignant
B. multiple, hamartomatous, not premalignant
C. solitary, neoplastic, premalignant
D. multiple, neoplastic, not premalignant
168. Which of the following factors is most valuable in predicting the biologic behavior of carcinoma of the colon?
   A. age of the patient
   B. duration of symptoms
   C. region of the colon affected
   D. diameter of the cancer
   E. lymph node metastasis

169. Which of the following is most strongly predisposing to colon cancer?
   A. ulcerative colitis
   B. familial polyposis
   C. Crohn’s disease
   D. Peutz-Jegher’s syndrome

170. Adenocarcinoma of the ascending colon is more likely than adenocarcinoma of the sigmoid colon to:
   A. encircle the bowel, causing a stricture or obstruction
   B. be bulky
   C. both
   D. neither

171. Persistent elevation of serum carcinoembryonic antigen following surgical resection of a carcinoma of the colon suggests:
   A. a poorly differentiated neoplasm
   B. a second cancer
   C. cirrhosis
   D. metastases
   E. peritonitis

172. In contrast to carcinoma of the right colon, carcinoma of the left colon tends to be associated with:
   A. anemia
   B. diverticulosis
   C. malabsorption
D. obstruction
E. no symptoms

173. Which of the following lesions of the colon has the least tendency to undergo malignant transformation?
   A. ulcerative colitis
   B. juvenile polyp
   C. villous adenoma
   D. polyp of Gardner’s syndrome

174. Predisposes to adenocarcinoma:
   A. Barrett’s esophagus
   B. achalasia, esophagus
   C. both
   D. neither

175. Predisposes to squamous cell carcinoma:
   A. Barrett’s esophagus
   B. achalasia, esophagus
   C. both
   D. neither

176. A 76-year-old male was admitted for symptoms including constipation, change in stool character and weight loss. Colonoscopy revealed multiple polyps in the rectosigmoid area. An adenomatous polyp was removed. Another colonic tumor was seen in the same patient which was flat with irregular “shaggy rug” surface. A biopsy showed frond-like glandular architecture. Atypical epithelial cells in clusters were seen beneath the muscularis mucosae. The most likely diagnosis is:
   A. adenomatous polyp
   B. villous adenoma with atypism
   C. focus of adenocarcinoma arising in villous adenoma
   D. colitis cystica profunda
   E. NONE of above
177. An elderly male had rectal bleeding. A flat velvety mass was observed in the cecum. The provisional diagnosis was villous adenoma. A partial colectomy was performed. Invasion through the muscularis mucosae, but not into the muscularis propria, was observed on paraffin sections. Therefore, the final diagnosis was:
   A. pseudopolyp
   B. adenomatous polyp
   C. adenocarcinoma Dukes A
   D. adenocarcinoma Dukes B
   E. adenocarcinoma Dukes C

178. A male heavy smoker develops increasing difficulty in swallowing gradually over six months. Constriction of the mid-esophagus is seen on x-ray of barium swallow. The most likely diagnosis is:
   A. pulsion diverticulum
   B. achalasia
   C. hiatal hernia
   D. squamous cell carcinoma
   E. Mallory-Weiss syndrome

179. Which of the following chemotherapy drug is likely to be toxic to gonads?
   A. Adriamycin
   B. Vinblastine
   C. Paclitaxel
   D. Procarbazine
   E. Prednisolone

180. High dose chemotherapy given prior to stem cell transplant may be associated with gonadal failure. Risk is least with the use of
   A. Busulfan + cyclophosphamide
   B. Cyclophosphamide + TBI
   C. Ifosfamide + carboplatin+ Etoposide
   D. Fludarabine + ATG

181. Incidence of Gallbladder cancer is highest in
182. Which of the following is least to occur as Gallbladder primary?
   A. Adenocarcinoma
   B. Squamous cell carcinoma
   C. Lymphoma
   D. Carcinoid tumor

183. Which of the following is less likely to be associated with Gallbladder cancer?
   A. Obesity
   B. Use of tobacco and alcohol
   C. Aflatoxins
   D. Past history of enteric fever

184. On immunohistochemistry, classical Hodgkin’s lymphoma Reed sternberg cells are likely to be
   A. CD15(-), CD 30(+),CD45(-)
   B. CD15(+), CD 30(+),CD45(+)
   C. CD15(+), CD 30(+),CD45(-)
   D. CD15(-), CD 30(+),CD45(+)

185. Most common site of metastasis in breast cancer is
   A. lung
   B. liver
   C. bone
   D. brain

186. Which one of the following cancers is usually associated with a moderate to high uptake of 18F-fluorodeoxyglucose (18 FFDG)?
   A. Bladder
   B. Colorectal
C. Thyroid
D. Testicular

187. Which one of the following is an accurate definition of the sensitivity of a screening test?
   A. The percentage of screening tests that is positive
   B. The percentage of screening tests that is negative among patients who remain unaffected by the condition of interest after screening
   C. The percentage of screening tests that is positive among patients who remain unaffected by the condition of interest after screening
   D. The probability of a diagnosis of the condition of interest after a positive screening test

188. Epstein-Barr virus-associated Hodgkin’s lymphoma is …
   A. common in the elderly
   B. common in young children
   C. more common in industrialized countries
   D. more common in females

189. Treatment of early stage favorable Hodgkin’s lymphoma …
   A. necessarily includes radiotherapy
   B. requires 6 to 8 cycles of multiagent chemotherapy
   C. with 4 cycles of chemotherapy and low dose involved-fielded radiotherapy is the standard of care
   D. With complete response to 2 chemotherapy cycles further treatment is not needed.

190. Regarding G-CSF - the best description of its mechanism of action and role in chemotherapy is
   A. reduced PMN nadir when used as prophylaxis
   B. reduced duration of neutropenia when used as prophylaxis
   C. not useful unless already neutropenic
   D. reduce thrombocytopenia severity
   E. potentiates effects of chemotherapy
191. A 44-year-old woman presented with post-coital bleeding. Investigation revealed a 2-cm grade 1, stage IB1 squamous cell carcinoma of the cervix. There was no evidence of lymphovascular space invasion. She had completed her family.
What is the most appropriate treatment?
A. brachytherapy
B. chemo-radiotherapy
C. excision cone biopsy only
D. radical hysterectomy
E. vaginal trachelectomy

192. Mutations in which gene are least likely to be associated with breast cancer if inherited in the germ-line?
A. ATM (ataxia-telangiectasia)
B. BRCA1
C. BRCA2
D. Bcl-2
E. p53

193. The least likely to be associated with bowel cancer is
A. Ataxia telangiectasia
B. Der-abl gene translocation
C. BRCA-1
D. BRCA-2
E. Pcl-2

194. 14 year old girl with Hodgkin's disease is treated with radiotherapy (mantle field).
Which is the most likely secondary carcinoma that could develop
A. breast
B. Lung
C. thyroid
D. NHL
E. AML
195. Young male with germ cell cancer. He is on bleomycin, etoposide and cisplatinum. What side effect would make you stop the treatment?

A. Peripheral neuropathy  
B. neutropenic septicaemia  
C. interstitial lung disease  
D. high tone hearing loss

196. Most likely route of ovarian cancer spread:

A. peritoneal  
B. direct spread to adnexae  
C. lymphatic  
D. direct spread to other organs  
E. none of above

197. Man with medullary carcinoma of thyroid, worried about his son. What do you do?

A. yearly calcitonin  
B. look for ret oncogene in the cancer  
C. look for ret oncogene in blood  
D. pentagastrin stimulation test  
E. reassure

198. Metastatic renal cell carcinoma, symptomatic:

A. best supportive care  
B. radiotherapy  
C. Surgery  
D. interferon  
E. Vinblastine

199. An older woman with breast cancer with bony metastases who was on aminoglutamethonine. Picture of rash which covered right breast and covered left breast a little, small nodules, some dead skin and a few scaly bits. Most likely cause of rash?

A. fungal
200. Male with bone pain from metastatic prostate cancer will be started on LHRH antagonist. He refuses orchidectomy. His illness will show:
   A. immediate improvement
   B. initially worse than improvement
   C. immediate improvement then decline
   D. slow improvement
   E. no change

201. Which of the following proto-oncogenes is least likely to be associated with an increased risk of breast cancer?
   A. ATM (ataxia telangiectasia)
   B. BRCA-1
   C. Bcl 2
   D. HER-2neu
   E. Wiskott Aldrich Syndrome

202. A 40-year-old male is operated on for a medullary carcinoma of the thyroid. He expresses concern about his 10 years son getting the disease. The best test:
   A. Yearly calcitonin in son
   B. yearly pentagastrin-stimulated calcitonin in son
   C. DNA analysis for RET proto-oncogene in tumor
   D. DNA analysis for RET proto-oncogene in peripheral blood
   E. Thyroid ultrasound in son

203. Patient with germ cell tumor receiving BEP. Which side-effect would necessitate cessation of the responsible drug:
   A. neutropenia
   B. high-tone severe hearing loss
   C. peripheral neuropathy
D. interstitial lung damage
E. none of above

204. A female presents with shortness of breath. CXR is shown with whiteout of Left lung. Told neurone-specific enolase +ve, next best step in management:
   A. Bronchoscopy with laser
   B. Radiotherapy
   C. Chemotherapy
   D. Best supportive care
   E. Surgical resection

205. Which of the following best describes the incidence of colon cancer with age:
   A. Linear increase with age
   B. Linear increase with plateau after age 50
   C. Parabolic
   D. Exponential rise after age 50
   E. Bimodal distribution with peaks at age 50 and 70

206. All of the following can occur in germ line leading to breast cancer except which one:
   A. BRCA1
   B. BRCA2
   C. Bcl-2
   D. p53
   E. Ataxia telangiectasia gene

207. Which of the following is the least likely to be involved in hereditary colon cancer:
   A. APC gene
   B. DNA repair gene
   C. Microsatellites
   D. Deletion of a gene
   E. Chromosomal translocation
208. A 50 year patient presents with metastatic renal cell carcinoma. The best management would be:
   A. IFN-α
   B. IL-2
   C. Vinblastine
   D. Best supportive care
   E. Progesterone

209. The genetic defect in hereditary non-polyposis coli lies in:
   A. APC gene
   B. DCC gene
   C. DNA repair defect
   D. proto-oncogene
   E. P53 gene

210. A female with a history of breast cancer removed. Examination revealed previous modified radical mastectomy scar. Diffuse erythema, with nodules and plaquing over and around scar with some extension onto contralateral breast is evident. The most likely diagnosis is:
   A. Radiation recall
   B. Fungal infection
   C. Tumor recurrence
   D. Herpes zoster
   E. None of above

211. Which is the strongest predictor of an increased risk of breast cancer in a 40 yrs woman:
   A. Early menarche
   B. Late first pregnancy > 30 years
   C. Previous breast carcinoma in contralateral breast
   D. Mother with breast cancer at age 70
   E. Hormone replacement therapy
212. A young male has non-Hodgkin's lymphoma. The LMO starts prednisone whilst awaiting a haematology admission. He presents unwell with WCC previously 30, now 2, urate 2.3, K 8.0, phosphate 10, Cr .25. The most likely diagnosis?
   A. Urate nephropathy
   B. Tumor lysis syndrome
   C. Dehydration
   D. Lymphoma infiltration of kidneys
   E. Hyperleucocytosis

213. A young female (30 years) had mantle radiotherapy in her teens. The most likely cancer site in her now:
   A. Thyroid
   B. Breast
   C. Bone marrow
   D. Lung
   E. Lymph nodes

214. The most common mechanism of spread of epithelial ovarian cancer is:
   A. Haematogenous
   B. Lymphatics
   C. Adjacent structures
   D. Trans-coelomic
   E. Lepidic

215. A man with metastatic prostate cancer with increasing bone pain. The decision is made to start a GnRH agonist. Your advice regarding the likely effect of this:
   A. Immediate resolution of symptoms
   B. Initial worsening of symptoms over two weeks followed by gradual resolution
   C. Delayed resolution of symptoms
   D. Slow progressive improvement of symptoms
   E. Initial resolution followed by severe worsening of symptoms

216. Concerning lung cancer:
   A. In Australia, the incidence in women is falling.
B. The use of chemotherapy in combination with radiotherapy in patients with stage III non-small cell lung cancer is associated with improved survival.
C. Chemotherapy for metastatic non-small cell lung cancer improves quality of life but not survival.
D. The optimal treatment for limited stage small cell lung cancer is with chemotherapy alone.
E. Paraneoplastic manifestations occur in the majority of patients.

217. Regarding familial breast cancer, which of the following statements is true?
A. The majority of cases are also associated with mutations of the p53 gene.
B. Mutation of the BRCA1 gene may be associated with an increased risk of both breast and ovarian cancer.
C. Chemoprevention with tamoxifen is of proven benefit.
D. Most affected families share the same specific mutation of the BRCA1 gene.
E. About 75% of affected family members develop breast cancer before the age of 35 years.

218. BRCA-1:
A. Type of oncogene
B. Associated with male breast cancer
C. Associated with breast and ovarian cancer
D. Associated with sporadic breast cancer
E. Produces a truncated protein

219. Oesophageal cancer is associated with:
A. Alcohol abuse
B. Corrosive-associated damage
C. Achalasia
D. Reflux
E. Smoking

220. Small cell lung cancer is more associated with (than NSCLC)
A. Hypercalcemia
B. Clubbing
C. Cushing’s
D. Eaton-Lambert syndrome
E. Hyponatraemia

221. Regarding cell kinetics of cancer:
A. 1 cm tumor = \(10^9\) cells
B. Cells in G0 are highly sensitive to chemotherapy
C. Common cancers have doubling times of 20 days
D. Intrinsic mutation rate in common cancers ~ 1 in 106 cells
E. Growth in primary cancer decreases in the later stages of development

222. 73 years female with metastatic breast cancer, on tamoxifen for 6/12. 2/7 Hx of nausea and thirst. Na+ 155, K+ 5.2, urine osm 137. Has multiple mets including sella turcica. Next most appropriate treatment:
A. Saline
B. Fluid restriction
C. Intranasal desmopressin
D. APD
E. Demeclocycline

223. Pre-menopausal woman found to have left axillary and supraclavicular nodes. Biopsy showed poorly differentiated cancer, oestrogen receptor poor. She has no other Symptoms, examination is otherwise normal and CXR and mammogram are normal. Next step:
A. Endoscopy
B. Bronchoscopy
C. Local XRT
D. Chemo and XRT
E. Hormonal therapy

224. A patient with known disseminated lymphoma is anaemic, with Hb = 100, MCV = 74, Fe = 4, Ferritin = 300. This is best explained by:
A. Fe deficiency
B. Impaired release of Fe from macrophages
C. Reduced erythropoietin  
D. Reticulocytosis  
E. Increased plasma clearance of Fe

225. Radiotherapy has its most severe effects on which tissues?  
A. liver  
B. kidney  
C. lung  
D. bone marrow  
E. spinal cord

226. Which of the following is more likely to result from the administration of bleomycin?  
A. sodium urate  
B. calcium pyrophosphate  
C. calcium hydroxyapatite  
D. calcium oxalate  
E. none of above

227. Patient with metastatic bowel cancer is taking Codeine 30 mg q4h without adequate analgesia. What is the most appropriate therapy?  
A. continue Codeine and add Paracetamol 1g qid  
B. stop Codeine, start MS Contain 10 mg bd and Paracetamol 1g qid  
C. stop Codeine, start MS Contain 20 mg bd and Paracetamol 1g qid  
D. stop Codeine, start MS Contain 10 mg bd and Panadeine ii qid  
E. nerve block is now indicated

228. Concerning the prophylactic use of G-CSF during cancer chemotherapy:  
A. it decreases the duration of neutropenia  
B. it decreases the severity of the neutropenic nadir  
C. it increases platelet numbers  
D. it potentiates the effect of chemotherapy  
E. it is only useful in established neutropenia
229. Phase 2 trial of new cancer drug. Which is least likely to account for variation in results:
   A. Size of metastases
   B. Site of metastases
   C. Gender
   D. Performance status
   E. Prior therapy

230. Breast cancer, least likely defect:
   A. BRCA1
   B. BRCA2
   C. Bcl-2
   D. ATM
   E. p53

231. In women the biggest risk factor for breast cancer is:
   A. Family history
   B. Previous contra lateral breast cancer
   C. Benign breast disease.
   D. Hyperplasia
   E. Breast feeding

232. Best treatment of metastatic renal cell cancer:
   A. Sutinib
   B. Vindarabine
   C. Palliative care
   D. Bevacizumab
   E. All of above

233. Major spread of ovarian cancer
   A. Adnexal
   B. Lymphatic
   C. Blood
   D. Peritoneal
E. Seeding

234. Patient gets bleomycin, etoposide, and cisplatin. Which cause for cessation of specific drug?
   A. Infertility
   B. Neutropenic sepsis
   C. Interstitial lung disease
   D. High frequency hearing loss
   E. Vomiting

235. 55 year female - breast cancer 3 yrs ago had mastectomy only. Presents with lower back pains. Some neurology - mild --> equivocal plantar. MRI Shows lesions in 3-4 different vertebra - partially compressing spinal cord.
   A. surgical decompression and radiotherapy
   B. chemotherapy
   C. oestrogen therapy
   D. NSAID
   E. Steroids

236. Cisplatin based chemotherapy. Which anti-emetic is most effective >24 post chemotherapy:
   A. Dexamethasone
   B. Ondansetron
   C. Tetracanniboids
   D. Maxolon
   E. Stemetil

237. Least effective for identifying an unknown primary
   A. Axillary lymphadenopathy → adenocarcinoma
   B. Secondary hepatic metastases → adenocarcinoma
   C. Mediastinal undifferentiated carcinoma
   D. Bone blast secondary
238. Middle aged smoker. Whole of left lung – white, collapse. Bronchoscopy shows an undifferentiated carcinoma in the left main bronchus. Presents with cough and haemoptysis. Small left clavicular lymph node palpable. Treatment:
   A. Surgery
   B. Radiotherapy
   C. Chemotherapy
   D. Palliation
   E. Chemoradiation

239. Smoker with carcinoma of the lung. Well until recently. Bronchoscopy shows extrinsic compression of the bronchus. Low serum sodium. Diagnosis:
   A. Small cell carcinoma
   B. Adenocarcinoma
   C. Squamous cell carcinoma
   D. Large cell carcinoma

240. In a young man testicular malignancy, how does \( \beta \) HCG cause gynaecomastia?
   A. By stimulating breast directly
   B. By increased testosterone
   C. By increased oestrogen
   D. Action of testicular tumor

241. Young lady had radiotherapy for Hodgkin’s disease. 10 years later, most likely sequelae:
   A. Thyroid carcinoma
   B. AML
   C. Non Hodgkin’s lymphoma
   D. Carcinoma breast
   E. Skin cancer

242. DNA microsatellite - best description
   A. Single locus 2 - 4 base pairs repeats
   B. DNA fragments
243. Which drug is least likely to affect cytokine production - especially IL-2 in T cells?
   A. Prednisone
   B. Mycophenolate
   C. Tacrolimus
   D. Rapamycin
   E. Cyclosporin A

244. Among viruses which are activated due to immunosuppression the least oncogenic virus is
   A. HHV8
   B. CMV
   C. Hepatitis B
   D. EBV
   E. Human papillomavirus

245. Disease least likely to have a family predisposition
   A. Breast cancer
   B. Lung cancer
   C. Germ cell cancer of testes
   D. Ovarian cancer
   E. Prostate cancer

246. Which one of the following drugs has the least bone marrow suppression?
   A. Daunorubicin
   B. Cisplatin
   C. Cyclophosphamide
   D. Etoposide
   E. Vincristine

247. Most common mode of spread of epithelial ovarian tumors occurs to
   A. Para aortic lymph nodes
B. Adnexae  
C. Bone  
D. Lungs  
E. Liver

248. Changes least likely with familial colonic cancer
   A. APC gene mutation  
   B. DNA repair gene mutation  
   C. Chromosomal translocation  
   D. Microsatellite instability  
   E. Loss of heterozygosity for tumour suppressor genes

249. Small cell lung carcinoma can cause (all of the following except)
   A. Hypercalcemia  
   B. Cushing’s syndrome  
   C. Clubbing  
   D. Lambert Eaton Myasthenic syndrome  
   E. SIADH

250. BRCA-1
   A. Associated with male breast cancer  
   B. Associated with sporadic breast cancer  
   C. Less associated with truncated protein  
   D. Associated with breast & ovarian carcinoma  
   E. Is an oncogene

251. Predisposing factors to oesophageal adenocarcinoma include the following except
   A. Achalasia  
   B. Gastro-oesophageal reflux disease  
   C. Alcohol  
   D. Smoking  
   E. Ingestion of caustic substances
252. Young woman with amenorrhoea & large uterus. CXR shows rounded opacities. What is the best test to monitor this condition?  
   A. CEA  
   B. HCG  
   C. α-fetoprotein  
   D. LDH

253. How would you treat metastatic Ca Breast in a postmenopausal woman?  
   A. Anti-oestrogen  
   B. Oestrogen  
   C. Progesterone  
   D. Anti-androgen  
   E. Aromatase inhibitor

254. What is the best prognostic indicator of post op survival for Ca Breast?  
   A. Tumour size  
   B. Lymph node involvement  
   C. HER 2 +ve  
   D. Tumour grade/ stage  
   E. Age

255. Which malignancy is least amenable to treatment?  
   A. Adeno Ca of axillary lymph nodes  
   B. Adeno Ca with sclerotic lesion in bone  
   C. Adeno Ca in liver  
   D. Squamous cell Ca in cervical lymph nodes  
   E. Poorly differentiated Ca in chest – midline (?mediastinal lymph nodes) in a young man

256. Associations for 1° Ca can be made for all of the following except  
   A. Adeno Ca mets in the liver in a middle aged man  
   B. Adeno Ca mets in axillary lymph nodes in a woman  
   C. Squamous Cell mets in cervical lymph nodes in a smoker  
   D. Mediastinal Adeno Ca in a young man
E. Skeletal sclerotic lesion in vertebrae in an elderly man

257. Mechanism of drug resistance of chemotherapeutic drugs
   A. P glycoprotein
   B. P53
   C. Bcl 2
   D. P450

258. A middle-aged man has a melanoma fully excised. What is the most important reason to follow him closely?
   A. Local and systemic recurrence
   B. New site recurrence
   C. In transit metastasis
   D. Lymph nodes
   E. New primary

259. A 68 year old man is admitted to the ER having had three large maroon colored stools. On arrival, he passes more bloody stools and clots. He is pale, orthostatic and tachycardic. NG aspirates are bilious. After resuscitation is begun, which of the following is the most appropriate initial test?
   A. Angiography
   B. Nuclear medicine red blood cell scan
   C. Rigid proctoscopy
   D. Colonoscopy
   E. Barium enema

260. The most common mode of spread of colon cancer is
   A. Hematogenous
   B. Lymphatic
   C. Direct extension
   D. Implantation

261. The following is the most important prognostic determinant of survival after treatment for colorectal cancer?
A. Lymph node involvement  
B. Transmural extension  
C. Tumor size  
D. Histologic differentiation  
E. DNA content

262. A 68-year-old man presents to his primary care physician for a routine physical examination. The patient's medical history is significant for hypertension. The patient is found to have guaiac-positive stools and is subsequently referred for colonoscopy. Colonoscopy reveals a “golf ball”-size, near-obstructing tumor in the descending colon, not admitting the scope. The biopsy is positive for adenocarcinoma of the colon. Which of the following is the next step in the management of this patient?  
A. Full metastatic workup first, and if negative, then plan for colon resection  
B. A course of radiation therapy prior to any resection  
C. Plan for pre-operative chemotherapy  
D. Do metastatic work up, but plan for colon resection anyway  
E. Schedule a barium enema to evaluate the proximal colon

263. For previous patients, after the appropriate evaluation, the patient undergoes surgery. No intraoperative evidence of metastases is identified. Postoperatively, the pathology report reveals that the tumor is an adenocarcinoma invading into the pericolonic fat, with 2 involved lymph nodes. After the patient recovers from surgery, which of the following is the most appropriate next step in his management?  
A. Abdominal CT scan every 6 months  
B. No further therapy is indicated, because the involved nodes were removed  
C. Chemotherapy with 5-fluorouracil (5-FU) based regimen  
D. Measurement of CEA levels yearly  
E. Colonoscopy every 6 months

264. A 65-year-old woman with no significant past medical history presents to the emergency department with a 2-day history of left lower quadrant abdominal pain. The patient denies nausea and vomiting, although she claims decreased oral intake. She also reports a low-grade fever and mild diarrhea. She describes a milder episode several years ago, which resolved on its own. On physical examination, the patient is
found to have left lower quadrant tenderness with some mild guarding, but no rebound. She is hemodynamically stable, and her heart rate is 82 per minute. In the initial management of this patient, which of the following is the most sensitive diagnostic test?

A. Complete blood count, SMA-7
B. An obstructive series
C. A barium enema study
D. Abdominal/pelvic CT with oral contrast
E. Abdominal ultrasound

265. A 60-year-old man presents for an annual physical examination. The examination is normal except for a palpable mass in the rectum on digital rectal examination. The patient denies any change in bowel habits and feels well. Rectal cancer is suspected. What is the next best step in the evaluation of this patient?

A. Computed tomography scan of the abdomen and pelvis
B. Double-contrast barium enema
C. Flexible sigmoidoscopy with biopsy of the lesion
D. Full colonoscopy with biopsy of the lesion
E. Magnetic resonance imaging scan of the abdomen and pelvis

266. A 78-year-old woman with coronary artery disease and severe chronic obstructive pulmonary disease is admitted to the hospital with painless jaundice. CT scan reveals the presence of multiple lesions in the liver, suggestive of metastases, and a nearly obstructing upper rectal mass. Colonoscopy demonstrates a large, ulcerated tumor in the proximal rectum and a residual lumen of less than 1 cm in diameter. While in the hospital, the patient develops a large bowel obstruction. What is the best treatment modality for this patient?

A. Immediate radiation therapy of the rectal mass
B. Placement of a colonic decompression tube
C. Emergency surgery with resection of the mass
D. Emergency surgery with creation of a diverting colostomy
E. Placement of a rectal self-expanding metal stent

267. A 57-year-old man is found to have a rectal mass 3 cm from the anal verge on digital rectal examination. Subsequent colonoscopy and biopsy confirm rectal
adenocarcinoma. EUS examination demonstrates penetration of the tumor into, but not through, the muscularis propria, but shows significant perirectal lymph nodes. CT scan of chest/abdomen/pelvis demonstrates no metastases. The patient is staged as T2N1M0. What procedure should be attempted to remove the primary lesion in this patient?

A. Endoscopic mucosal resection (EMR) to remove the lesion
B. Endoscopic argon plasma coagulation (APC) therapy to cauterize and ablate the lesion
C. Surgical transanal excision of the lesion
D. Neo-adjuvant chemoradiation followed by transanal excision
E. Neo-adjuvant chemoradiation followed by abdominoperineal resection (APR)

268. A 70-year-old man is found to have distal rectal cancer during a screening colonoscopy. The patient undergoes preoperative staging and is found to have a 1.5-cm rectal mass that does not invade the muscularis propria of the rectal wall. There is no regional lymphadenopathy and no evidence of distant metastases. The patient is staged at T1N0M0. The patient is advised to undergo APR but refuses because it will lead to anal sphincter loss and permanent colostomy. Which of the following represents a viable alternate therapeutic option for this patient?

A. Chemotherapy alone
B. Radiation therapy alone
C. Chemoradiation therapy
D. Full-thickness surgical removal of tumor (transanal excision)
E. Endoscopic ablation of the tumor with Argon Plasma Coagulator (APC).

269. Which of the following may be appropriate initial therapy for a 4 cm cancer of the anal canal?

A. Local excision
B. Abdominoperineal resection
C. Combined chemotherapy and radiotherapy
D. Laser therapy
E. Cryotherapy

270. Which of the following processes is most likely to be associated with apoptosis?
A. Nucleosomal DNA laddering  
B. Loss of plasma membrane integrity  
C. Swelling of the nucleus  
D. Endoreduplication

271. The purpose of a phase II clinical trial is to:
A. estimate the toxicity of treatment to be tested.  
B. estimate the efficacy of treatment to be tested.  
C. estimate the preclinical toxicity of an experimental agent.  
D. determine a safe starting dose of an experimental agent.

272. Which of the following chemotherapy agents is most effective against soft tissue sarcoma?
A. Thiotepa  
B. Cyclophosphamide  
C. Dactinomycin  
D. Doxorubicin

273. What number of axillary lymph nodes removed for sampling during a level I/II node dissection for breast cancer most likely would require postoperative radiation therapy to the axilla?
A. 02  
B. 06  
C. 08  
D. 10

274. Which of the following types of cancer was associated with a statistically significant improvement in survival for patients who had one to three solitary brain metastases and received whole brain radiation therapy with the addition of stereotactic radiosurgery, according to results of the RTOG 9508 phase III trial?
A. Breast cancer  
B. Renal cell cancer  
C. Non-small cell lung cancer  
D. Melanoma
275. In RTOG 8501, what was the 5-year overall survival rate for patients who had esophageal cancer and received radiation therapy alone?
   A. 00%
   B. 10%
   C. 25%
   D. 35%

276. Which of the following tumor stages is correctly matched to the appropriate prostate cancer involvement or invasion?
   A. Stage T2b is associated with tumor involvement of more than one half of one lobe but not both lobes of the prostate.
   B. Stage T2c is associated with nonpalpable tumor involvement of both lobes of the prostate via needle biopsy.
   C. Stage T3a is associated with tumor invasion of the prostate apex.
   D. Stage T4 is associated with tumor invasion of the seminal vesicles.

277. According to GOG 122 (Randall), the survival rate of patients who have surgical stage III-IV endometrial cancer and receive adjuvant abdominopelvic irradiation compared to adjuvant chemotherapy is:
   A. worse.
   B. similar.
   C. improved.
   D. not able to be analyzed.

278. A well-lateralized, stage T3N0 squamous cell carcinoma of the nasopharynx has at least a 15% risk of metastasis to the:
   A. ipsilateral parotid lymph nodes.
   B. ipsilateral submandibular lymph nodes.
   C. posterior triangle lymph nodes bilaterally.
   D. occipital lymph nodes bilaterally.

279. What is the second leading cause of lung cancer?
   A. Exposure to arsenic
B. Exposure to asbestos
C. Exposure to benzene
D. Exposure to radon

280. Which of the following chromosomal translocations is most commonly associated with Burkitt lymphoma?
   A. t(8;14)
   B. t(9;22)
   C. t(11;14)
   D. t(14;18)

281. What is the most common secondary malignant neoplasm inside the radiation field for patients with retinoblastoma?
   A. Squamous cell carcinoma
   B. Non-Hodgkin lymphoma
   C. Fibrosarcoma
   D. Osteosarcoma

282. Three different lung cancer radiation treatments are being assessed for maximum-tolerated dose. This study is an example of what type of clinical trial?
   A. Phase I
   B. Phase II
   C. Phase III
   D. Pilot

283. Which of the following factors is the most important predictor of disease-free survival and overall survival in patients with breast cancer?
   A. Tumor size
   B. Mitotic index
   C. Axillary lymph node status
   D. Histopathologic tumor grade

284. Which of the following diagnostic tests is most useful for determining the tumor stage of esophageal cancer?
   A. Esophagogastroduodenoscopy
B. Endoscopic ultrasound
C. PET scan
D. CT scan

285. Which of the following studies compared surgery alone versus surgery plus external-beam pelvic irradiation in patients with early-stage endometrial cancer and required all patients to undergo surgical staging with pelvic lymphadenectomy?
   A. GOG 99 (Keys)
   B. GOG 33 (Morrow)
   C. PORTEC (Creutzberg)
   D. Norwegian (Aalders)

286. Which of the following findings is most likely to be caused by loss of function of right cranial nerve XII?
   A. Deviation of the tongue to the left side with protrusion
   B. Deviation of the tongue to the right side with protrusion
   C. Loss of sweet taste on the right side of the tongue
   D. Loss of salty taste on the right side of the tongue

287. Which of the following statements about video-assisted thoracic surgery for patients with lung cancer is FALSE?
   A. The postoperative period is shorter.
   B. It decreases the risk of intraoperative bleeding.
   C. It is a viable alternative to thoracotomy in patients who are frail.
   D. Locoregional recurrence is increased.

288. According to GOG 99 (Keys), which of the following sites is most likely to be associated with cancer recurrence in a patient who has early-stage endometrial cancer and undergoes TAH-BSO without adjuvant irradiation?
   A. Liver
   B. Vaginal vault
   C. Pelvic lymph nodes
   D. Paraortic lymph nodes
289. Which of the following laboratory tests is most appropriate for determining if a patient with acromegaly has responded favorably to radiation therapy?
   A. Serum glucose level
   B. Growth hormone (GH)
   C. Thyroid stimulating hormone (TSH)
   D. Insulin-like growth factor-1 (IGF-1)

290. Which of the following soft tissue sarcomas is most likely to be found in a patient with neurofibromatosis, type 1?
   A. Liposarcoma
   B. Fibrosarcoma
   C. Leiomyosarcoma
   D. Malignant peripheral nerve sheath tumor

291. Which of the following survival times is most likely to be associated with a patient who has a class II brain metastasis, based on the Radiation Therapy Oncology Group (RTOG) recursive partitioning analysis (RPA)?
   A. 10.2 months
   B. 07.1 months
   C. 04.2 months
   D. 02.3 months

292. Radiation-induced cell death in carcinomas typically occurs immediately after attempting to traverse which phase of the cell cycle?
   A. G0
   B. G1
   C. G2
   D. M

293. Which of the following antigens is a T-cell marker?
   A. CD7
   B. CD20
   C. CD30
   D. CD40
294. Which of the following statements about adenocarcinoma of the lung is true?
   A. It is the most common histologic subtype.
   B. It is treated differently than squamous cell carcinoma.
   C. It is less likely to metastasize to the brain than other histologies.
   D. It is rarely associated with TTF-1.

295. A 9-month-old infant has a mass in the left flank, periorbital ecchymosis, and bone metastasis to the right femur. Biopsy results are consistent with neuroblastoma. What cancer stage would be most appropriate for this patient's condition?
   A. Stage 2
   B. Stage 3
   C. Stage 4
   D. Stage 4S

296. Hypoxia adversely affects the treatment and management of cancers because it:
   A. increases blood flow to the tumor.
   B. impedes adequate blood flow to the tumor.
   C. activates molecular pathways contributing to resistance.
   D. causes dyspnea and tachypnea in the patient.

297. What is the best method for minimizing bias in a national trial comparing two arms therapy regimens?
   A. Randomization
   B. Patient stratification
   C. Univariate analysis of prognostic factors
   D. Multivariate analysis of prognostic factors

298. Which of the following primary bone tumors is most common?
   A. Ewing sarcoma
   B. Malignant giant cell tumor
   C. Chondrosarcoma
   D. Osteosarcoma
299. Which of the following complications is NOT associated with a radical prostatectomy?
   A. Proctitis
   B. Erectile dysfunction
   C. Urinary incontinence
   D. Anastomotic stricture

300. Which of the following FIGO stages is associated with a patient who has endometrial cancer with extension to the cervical stroma?
   A. IC
   B. IIA
   C. IIB
   D. IIIA

301. What is the risk of metastasis to the lymph nodes in a patient with stage T2N0 squamous cell carcinoma of the lateral aspect of the oral tongue?
   A. There is a greater risk of metastasis to the retropharyngeal nodes than to the mid-jugular nodes.
   B. There is a greater risk of metastasis to the superior jugular nodes than to the submandibular nodes.
   C. There is a similar risk of metastasis to the retropharyngeal nodes as to the mid-jugular nodes.
   D. There is a similar risk of metastasis to the submandibular nodes as to the mid-jugular nodes.

302. Which of the following factors is included in the international prognostic index (IPI) for non-Hodgkin lymphoma?
   A. Histology
   B. Weight loss
   C. Lactate dehydrogenase (LDH) level
   D. Erythrocyte sedimentation rate (ESR)

303. Which of the following factors most adversely affects patients receiving radiation therapy for squamous cell carcinoma of the head and neck?
A. Concurrent HPV infection
B. Concurrent tobacco use
C. Gender of the patient
D. Grade of the cancer

304. Which of the following pathological findings is associated with patients who have meningioma?
   A. Verocay bodies
   B. Psammoma bodies
   C. Small, round blue cells
   D. Flexner-Wintersteiner rosettes

305. According to Intergroup Trial 0116, adjuvant chemotherapy and radiation therapy after gastrectomy were more likely than gastrectomy alone to:
   A. result in an unacceptable level of toxicity in the majority of patients.
   B. result in a statistically significant decrease in the rate of distant metastases.
   C. result in a statistically significant improvement in overall patient survival.
   D. be most beneficial after D2 lymph node dissections.

306. Which of the following statements about post-prostatectomy radiation therapy used in the EORTC 22911 Trial is true?
   A. It resulted in more frequent grade 2 or grade 3 late effects.
   B. It improved local control, biochemical progression-free survival, and overall patient survival.
   C. It was beneficial for patients who had prostate cancer with positive lymph nodes.
   D. Hormone therapy was added to the treatment regimen for patients with positive lymph nodes.

307. Which of the following symptoms is most common in patients who present with endometrial cancer?
   A. Pelvic pain
   B. Low back pain
   C. Vaginal bleeding
   D. Hematuria
308. Which of the following stages of oropharyngeal squamous cell carcinoma is associated with the lowest risk of contralateral cervical lymph node metastases?
   A. T2N1 with the primary tumor confined to the tonsillar fossa
   B. T1N1 involving the most lateral section of the soft palate
   C. T1N1 confined to the glossal-tonsillar sulcus
   D. T1N0 involving the lateral aspect of the base of tongue

309. Which of the following equations is used to determine a positive predictive value?
   A. True positive / (True positive + false negative)
   B. True positive / (True positive + false positive)
   C. True negative / (True negative + false negative)
   D. True negative / (True negative + false positive)

310. Which of the following treatment outcomes is associated with patients who have DCIS, according to prospective randomized trials?
   A. In NSABP B-17, the actuarial rate of breast cancer recurrence after 12 years in patients who received surgery only was 24%.
   B. In NSABP B-17, the actuarial rate of breast cancer recurrence after 12 years in patients who received surgery plus breast irradiation was 16%.
   C. In NSABP B-24, breast irradiation reduced the risk of breast cancer recurrence in all subgroups except for the patients with positive surgical margins.
   D. In EORTC 10853, the subtype of DCIS histology had no effect on patients' risk for breast cancer recurrence.

311. Which of the following lymph nodes is NOT commonly associated with prostate cancer metastases?
   A. Inguinal
   B. External iliac
   C. Presacral
   D. Obturator
312. Which of the following FIGO stages is associated with a patient who has endometrial cancer with extension through the entire myometrium and involvement of the surface of the uterine serosa?
   A. IC
   B. IIB
   C. IIIA
   D. IIIC

313. Which of the following histologic subtypes of rhabdomyosarcoma has the worst prognosis?
   A. Alveolar
   B. Embryonal
   C. Spindle cell
   D. Botryoid

314. Primary surgery is most appropriate for patients with which of the following types of squamous cell carcinoma?
   A. Stage T1N0 of the oropharyngeal portion of the posterior pharyngeal wall
   B. Stage T1N0 of the floor of mouth
   C. Stage T1N0 of the soft palate
   D. Stage T2N0 of the base of tongue

315. Which of the following statements about radiation-induced fibrosis is true?
   A. It is usually irreversible.
   B. It can be easily managed by surgical excision.
   C. It can be effectively treated using hyperbaric oxygen.
   D. The severity is reduced with concurrent chemotherapy.

316. Median survival is defined as the:
   A. most prevalent time to death in the sample population.
   B. point in time a survival probability on a Kaplan-Meier curve is 50%.
   C. median of the survival-time intervals.
   D. mean of the survival-time intervals.
317. A 43-year-old man presented with vomiting and 4-kg weight loss. His performance status was 1. He was found to have a pre-pyloric gastric carcinoma gastric outlet obstruction. A CT scan showed no metastases.
What is the most appropriate next step?
   A. chemo-radiation
   B. neoadjuvant chemotherapy
   C. palliative bypass
   D. radical resection
   E. self-expanding stent

318. What is the stage of a 5-cm gastric tumor that extends into, but not through, the muscularis propria with 16 of 23 positive lymph nodes?
   A. I
   B. II
   C. III
   D. IV

319. Which of the following chemotherapy agents recently has been shown to be effective in treating hormone-refractory prostate cancer?
   A. Docetaxel
   B. Gemcitabine
   C. Oxaliplatin
   D. Topotecan

320. Which of the following tumor stages is associated with a patient who has vulvar cancer arising on the labia minora with involvement of the lower urethra?
   A. T1
   B. T2
   C. T3
   D. T4

321. Which of the following statements about staging for non-small cell carcinoma of the lung is true?
   A. CT scan provides approximately 95% sensitivity and specificity.
   B. Screening tests have reduced the mortality rate for high-risk patients.
C. PET scanning has replaced mediastinoscopy for determining cancer staging.
D. Positive PET scan findings require pathological confirmation.

322. What is a major criterion for the diagnosis of multiple myeloma?
   A. Calcium level of >12 mg/dL
   B. Hemoglobin level of 8.5 g/dL
   C. Plasmacytoma on tissue biopsy
   D. Lytic bone lesions on skeletal survey

323. Which of the following body sites is most commonly involved in patients with rhabdomyosarcoma?
   A. Thorax
   B. Extremities
   C. Head and neck
   D. Genitourinary tract

324. Which of the following statements about the management of brain metastases secondary to breast cancer is true?
   A. Prednisone therapy should be initiated with a loading dose of 20 mg, followed by 10 mg four times daily.
   B. Symptomatic improvement is expected between 24 to 72 hours after initiation of therapy.
   C. Treatment is more effective for focal neurological deficits than for headaches.
   D. Dexamethasone must be administered four times daily because of its half-life properties.

325. What is the most common histology of tumors involving the terminal ileum?
   A. Sarcoma
   B. Carcinoid
   C. Lymphoma
   D. Adenocarcinoma

326. Which of the following pathological stages of breast cancer is associated with a patient who has a 5.0-cm primary tumor and 12/15 positive, non-fixed lymph nodes?
327. What stage of non-small cell lung cancer is most appropriate for a patient who has a 3-cm mass in the right upper lobe, mediastinal adenopathy, and a 2-cm nodule in the right lower lobe of the lung?
   A. Stage IIB
   B. Stage IIIA
   C. Stage IIIB
   D. Stage IV

328. What is the most common group classification of rhabdomyosarcoma at initial diagnosis?
   A. Group I
   B. Group II
   C. Group III
   D. Group IV

329. Where is vulvar carcinoma most commonly located?
   A. Clitoris
   B. Mons pubis
   C. Vaginal vestibule
   D. Labia

330. What is the best treatment for malignant mesothelioma?
   A. Extrapleural pneumonectomy, followed by chemotherapy and adjuvant radiation therapy to a dose of 50 Gy to 60 Gy
   B. Pleurodesis, followed by systemic chemotherapy with subsequent external-beam radiation therapy to a dose of 60 Gy in 20 fractions
   C. IMRT to a localized positive margin to a radiation dose of 70 Gy
   D. IMRT to the entire lung to a radiation dose of 45 Gy
331. Which of the following factors is most strongly linked to an increased risk for the development of multiple myeloma?
   A. Alcohol use
   B. Tobacco use
   C. Mustard gas exposure
   D. Ionizing radiation exposure

332. Which of the following results is associated with concurrent chemoradiation therapy versus radiation therapy alone for patients with locally advanced laryngeal cancer, based on the RTOG 91-11 study?
   A. Same rate of distant metastases
   B. Improved swallowing function
   C. Improved overall survival
   D. Improved local control

333. Which of the following side effects is NOT associated with long-term hormonal therapy combined with radiation therapy for prostate cancer?
   A. Decreased sexual libido and hot flashes
   B. Osteoporosis and muscle weakness
   C. Increased late GU toxicity
   D. Increased late GI toxicity

334. What is the second most common histology associated with vulvar cancers?
   A. Adenocarcinoma
   B. Adenosquamous carcinoma
   C. Squamous cell carcinoma
   D. Melanoma

335. What is the most common genetic abnormality associated with low-grade gliomas?
   A. 1p
   B. 10q
   C. 17p
   D. 19q
336. Which of the following processes is associated with the loss of heterozygosity?
   A. Activation of oncogenes
   B. Inactivation of tumor suppressor genes
   C. Hypermethylation of histone proteins
   D. Initiation of apoptosis

337. Which of the following statements about asbestos exposure and mesothelioma is true?
   A. The carcinogenic effects appear to result from its physical properties rather than its chemical structure.
   B. Mesothelioma cell lines appear to be less sensitive than non-small cell lung cancer cell lines to radiation.
   C. Screening of asbestos workers for mesothelioma is an effective way to improve the cure rate of this disease.
   D. It is rare for mesothelioma to be misdiagnosed.

338. Which of the following anatomical sites is most commonly associated with extraosseous, soft tissue plasmacytomas?
   A. Back
   B. Pelvis
   C. Lower extremity
   D. Head and neck

339. Which of the following cell markers is most commonly associated with classic Hodgkin lymphoma?
   A. CD15+, CD30+
   B. CD15+, CD30-
   C. CD15-, CD30+
   D. CD15-, CD30-

340. Which of the following statements about brain metastases secondary to breast cancer is not true?
   A. Breast cancer is the most common cause of brain metastases in women.
B. HER-2/neu gene overexpression is associated with an increased risk of brain metastases.
C. Increased tumor size and number of positive lymph nodes are associated with an increased risk of brain metastases.
D. Brain metastases are most likely to involve a solitary site.

341. What percent of patients diagnosed with testicular seminoma have elevated α-fetoprotein serum levels?
   A. 00%
   B. 10%
   C. 20%
   D. 30%

342. Which of the following types of gynecologic cancer has a similar pattern of tumor spread as that associated with fallopian tube cancer?
   A. Vulvar
   B. Ovarian
   C. Endometrial
   D. Cervical

343. Regarding breast cancer, all of the following are correct EXCEPT:
   A. The incidence increases steadily with age.
   B. Approximately 75% of all cases are diagnosed in postmenopausal women.
   C. The lifetime risk is 1 of 8 for women living into their 80s.
   D. The disease is uncommon in women younger than 40 years of age.
   E. It is the most common cancer during pregnancy

344. Which of the following statements about malignant mesothelioma is true?
   A. The median patient survival time is 24 months.
   B. Most patients have bilateral disease at presentation.
   C. Diagnosis is most commonly established via cytology of pleural effusions.
   D. It commonly spreads along the biopsy tract.

345. Clinical radiation sensitivity is consistently associated with the absence of:
A. p53.
B. HER-2/neu.
C. gamma-H2AX.
D. ATM.

346. Which of the following statements about osteosarcoma is true?
A. It rarely occurs in African Americans.
B. The amount of tumor necrosis at resection is an important prognostic factor.
C. The addition of ifosfamide and etoposide to standard VACA-based chemotherapy improves survival for patients with nonmetastatic disease.
D. Radiation therapy is the preferred treatment for local control.

347. Which of the following statements about leptomeningeal metastases secondary to breast cancer is true?
A. A headache is the most common symptom in patients at presentation.
B. A contrast-enhanced CT scan is best for establishing the diagnosis.
C. Radiation therapy should be administered to the entire CNS axis.
D. The median survival rate is 4 months, but longer survival times are associated with breast cancer.

348. Which of the following statements about TNM staging for lung cancer is FALSE?
A. Stage N1 involves lymph node stations 10-14.
B. Stage N2 involves the ipsilateral mediastinal lymph nodes.
C. Stage N3 involves the contralateral hilar and mediastinal lymph nodes.
D. Stage M1 involves the contralateral supraclavicular lymph nodes.

349. Which of the following statements about squamous cell carcinoma of the larynx is true?
A. Primary tumors more commonly arise from the supraglottic laryngeal structures than from the glottic region.
B. At the time of diagnosis, 50% of tumors have extended beyond the laryngeal structures.
C. Supraglottic tumors are more likely to present with palpable lymphadenopathy than glottic lesions.
D. Subglottic tumors tend to present with early lesions that are easily managed with primary surgical resection.

350. Which of the following statements about breast cancer in men is true?
A. The tumor is most commonly ER-positive.
B. The disease should be treated with cisplatin-based chemotherapy.
C. The majority of patients who undergo genetic screening will be found to have a BRCA1 germline mutation.
D. Approximately 25% of patients will have noninvasive disease at diagnosis.

351. Which stage is most appropriate for a patient who has testicular seminoma involving the spermatic cord with multiple 2- to 5-cm paraaortic lymph nodes?
A. Stage IB
B. Stage IIB
C. Stage IIC
D. Stage IIIA

352. Which of the following statements about malignant mesothelioma is true?
A. Chemoradiation therapy alone offers promising results.
B. Most patients die of metastatic disease and not of local recurrence.
C. Patients who have the epithelial subtype have a worse prognosis.
D. Mediastinal lymph node involvement affects the prognosis.

353. Hodgkin lymphoma most commonly occurs during which decade of life?
A. Second
B. Third
C. Fourth
D. Fifth

354. BRCA2 is responsible for breast cancer and characterized by:
A. Chromosomal 17 is the location
B. It is less common than BRCA1 in risk of breast cancer
C. Its mutation can be present in sporadic breast cancer
D. It is not responsible for breast cancer in men.
E. It is one of oncogenes

355. Soft tissue sarcoma most commonly arises from what site?
   A. Head and neck
   B. Retroperitoneum
   C. Lower extremity
   D. Upper extremity

356. Which of the following adjuvant systemic therapies would be most appropriate to recommend for an otherwise healthy patient who has HER-2/neu-positive (FISH) ER/PR-negative breast cancer with positive axillary lymph nodes?
   A. Four cycles of dose-dense doxorubicin and cyclophosphamide (AC) in conjunction with four cycles of paclitaxel.
   B. Four cycles of AC, four cycles of paclitaxel with concurrent trastuzumab, and continuation of trastuzumab for 1 year.
   C. Four cycles of paclitaxel, four cycles of AC with concurrent trastuzumab, and continuation of trastuzumab for 1 year.
   D. Six cycles of docetaxel, doxorubicin, and cyclophosphamide.

357. Which histology is most likely in men older than 60 years with testicular cancer?
   A. Yolk sac tumor
   B. Classical seminoma
   C. Choriocarcinoma
   D. Lymphoma

358. Which of the following factors is NOT typically associated with improved overall survival for patients who present with unknown primary tumors of the head and neck region?
   A. Radiation doses of >50 Gy
   B. Complete resection of the involved lymph nodes
   C. Subsequent presentation of the primary tumor
   D. Stage N1 versus stage N2 lymph node involvement

359. Which of the following conditions should be treated like small cell lung cancer?
A. Combined small cell lung cancer and non-small cell lung cancer
B. Non-small cell lung cancer with neuroendocrine features
C. Large cell neuroendocrine tumors
D. Atypical carcinoid tumors

360. The basal molecular phenotype of breast cancer most commonly is:
A. ER-positive, PR-positive, HER-2/neu-negative.
B. ER-positive, PR-positive, HER-2/neu-positive.
C. ER-negative, PR-negative, HER-2/neu-negative.
D. ER-negative, PR-negative, HER-2/neu-positive.

361. A 22-year-old man with Hodgkin disease has adenopathy of the right cervical and right supraclavicular regions and weight loss of >10% of his baseline body weight. Which of the following cancer stages is most likely to be associated with this patient's condition?
A. Stage IA
B. Stage IB
C. Stage IIA
D. Stage IIB

362. A 72-year-old man was found to have an anterior rectal cancer at 2 cm from the anal verge. A CT scan of chest, abdomen and pelvis showed no evidence of metastatic disease. An MR scan of pelvis showed an anterior tumour abutting the prostate gland, radiologically staged as a T3, N1, M0 cancer. What is the most appropriate next step in management?
A. abdominoperineal resection
B. chemotherapy
C. long-course chemoradiation
D. short-course radiotherapy
E. total mesorectal excision

363. Which of the following statements about pancreatic cancer is FALSE?
A. Approximately 10% to 20% of pancreatic cancers are associated with hereditary factors.
B. New-onset diabetes mellitus may be the first clinical feature in 10% of patients.
C. Tumors of the pancreatic head arise to the right of the superior mesenteric vein-portal vein confluence and include tumors of uncinate origin.
D. The most common physical finding at initial presentation is Courvoisier’s sign.

364. Which of the following statements about unknown primary head and neck tumors is true?
   A. PET imaging is able to detect the primary tumor in 60% of cases.
   B. Random biopsies will reveal the primary lesion in 40% of cases.
   C. Chest imaging will reveal a primary lung tumor in 20% of cases.
   D. Tonsillectomy may reveal the occult primary tumor in 20% of cases.

365. Taxane derivatives elicit cytotoxic effects mainly by which of the following mechanisms?
   A. Stabilization of microtubules and prevention of their disassembly
   B. Intercalation into DNA and inhibition of DNA replication
   C. Inhibition of topoisomerase
   D. Inhibition of DNA repair

366. Which of the following statements about patients who are diagnosed with breast cancer and have supraclavicular lymph node involvement is true?
   A. The diagnosis should be classified as stage M1 breast cancer.
   B. Approximately 30% of patients will have clinically detectable internal mammary lymph nodes on CT scan of the chest.
   C. Over 20% of patients will have lymphedema and brachial plexopathy.
   D. Over 20% of patients will survive 10 years with aggressive trimodality therapy.

367. Bladder cancer associated with hydronephrosis and invasion limited to the outer half of the bladder muscle layer corresponds to which T stage?
   A. T2
   B. T3
   C. T4a
   D. T4b
368. A 42-year-old man presented with a 1-month history of altered personality and increased seizure frequency. An MR scan of brain demonstrated an enhancing lesion in the right frontal lobe. Histology revealed a grade 3 oligodendroglioma, with loss of heterozygosity of 1p/19q.

What is the most appropriate treatment?
A. chemoradiation with temozolomide
B. cranial irradiation
C. craniospinal irradiation
D. procarbazine, vincristine and lomustine (PCV)
E. temozolomide

369. Which of the following Hodgkin lymphoma subtypes is most closely associated with the development of non-Hodgkin lymphoma?
A. Nodular sclerosis
B. Lymphocyte depleted
C. Lymphocyte predominant
D. Lymphocyte rich

370. Which of the following primary sites is most commonly involved in patients who are diagnosed with Ewing sarcoma?
A. Pelvis
B. Humerus
C. Fibula
D. Tibia

371. During gene therapy, genes are most commonly transferred into cells by:
A. viral vectors.
B. bacterial plasmids.
C. synthetic oligonucleotide primers.
D. small-interfering RNA (siRNA).

372. Which of the following statements about desmoid tumors is true?
A. They commonly metastasize to the lungs.
B. They commonly metastasize to the bones.
C. Surgical excision is the most common treatment of choice.
D. Definitive radiation therapy can achieve local control in 25% of cases.

373. Multidrug resistance in tumor cells is often attributed to extrusion of drugs mediated by overexpression of which of the following proteins?
   A. P-glycoprotein
   B. Bcl-2
   C. BAX
   D. TP53

374. Which of the following lymph node chains is most commonly involved in patients who present with Hodgkin lymphoma?
   A. Inguinal
   B. Paraaortic
   C. Mediastinal
   D. Cervical

375. Which of the following cell cycle phases is most radiosensitive?
   A. M
   B. S
   C. G1
   D. G0

376. Based on the results of SWOG 8797 (Peters), which of the following pathologic findings after a radical hysterectomy and pelvic lymph node dissection is an indication for adjuvant chemotherapy with radiation therapy for patients with high-risk cancers of the cervix?
   A. Tumor size >5 cm
   B. Lymphovascular space invasion
   C. Depth of invasion into the deep third of the cervical stroma
   D. Microscopic involvement of the parametrium

377. A 29-year-old woman had a 2.5-mm Breslow thickness melanoma removed from her right shin. She was referred for wide local excision of the scar and consideration of sentinel node biopsy.
In what proportion of patients with a negative sentinel node biopsy does nodal recurrence subsequently develop in the same lymph node basin?

A. <1%
B. 1–4%
C. 5–9%
D. 10–14%
E. 15–25%

378. According to the VA Lung Cancer Group's classification, which of the following sites of lymphadenopathy is associated with extensive-stage small cell lung cancer?

A. Ipsilateral hilar lymph nodes
B. Ipsilateral supraclavicular lymph nodes
C. Contralateral supraclavicular lymph nodes
D. Contralateral mediastinal lymph nodes

379. Which of the following factors increases a patient's risk for the development of leukemia?

A. Occupational exposure to benzene
B. Occupational exposure to aluminum
C. Use of mitomycin C
D. Exposure to HPV

380. Which of the following genetic abnormalities is most commonly associated with Ewing sarcoma?

A. t(8;14)
B. t(11;22)
C. 1p/19q gene deletion
D. Loss of heterozygosity (LOH) of the retinoblastoma gene

381. Which of the following statements about the diagnosis of inflammatory breast cancer is true?

A. There may not be a discrete palpable mass at presentation.
B. At presentation, a patient may report having a longstanding breast mass that developed skin changes over time.
382. Which of the following cell cycle phase transitions is most affected when the TP53 gene is lost or mutated?
   A. $G_0 \rightarrow G_1$
   B. $G_1 \rightarrow S$
   C. $G_2 \rightarrow M$
   D. $S \rightarrow G_2$

383. Which of the following molecular mechanisms is specifically implicated in the oncogenesis of cervical cancer associated with prior HPV infection?
   A. The E7 protein expression inactivates p53.
   B. The E7 protein expression inhibits Rb function.
   C. The E6 protein expression suppresses $G_2$-$M$ cell cycle arrest.
   D. The E6 protein expression activates $c$-$myc$.

384. A 30-year-old man presented with a swelling in the testis and an ultrasound scan confirmed the presence of a malignant mass. Following orchidectomy, he was found to have a 40-mm seminomatous germ cell tumour without non-seminomatous components. There was evidence of vascular invasion within the testis.
   Investigations:
   serum lactate dehydrogenase (LDH) 1250 U/L (10–250)
   serum α-fetoprotein normal
   serum β-human chorionic gonadotrophin (HCG) 700 U/L (<5)
   A CT scan of body showed retroperitoneal lymphadenopathy of up to 7 cm in size, a 3-cm mediastinal lymph node and over 30 pulmonary metastases. There were no signs of liver, brain or bone metastases.
   What is the most appropriate International Germ Cell Cancer Collaborative Group classification?
   A. good prognosis because of the absence of liver, bone and brain metastases
   B. good prognosis because of the raised HCG and LDH
   C. intermediate prognosis because of the presence of lung metastases
   D. intermediate prognosis because of the raised serum HCG and LDH
   E. poor prognosis because of the raised serum HCG and LDH
385. What is the most common site of metastatic disease in patients with Ewing sarcoma?
   A. Lung
   B. Bone
   C. Bone marrow
   D. Lymph nodes

386. A 50-year-old woman with early breast cancer presented with fatigue to the accident and emergency department on day 7 of her first adjuvant chemotherapy cycle. On examination, her temperature was 38.5°C, her pulse was 110 beats per minute and her blood pressure was 110/70 mmHg. A full blood count was requested. What is the most appropriate next step?
   A. await full blood count result
   B. intravenous broad-spectrum antibiotics
   C. intravenous broad-spectrum antibiotics and granulocyte colony-stimulating factor (G-CSF)
   D. oral broad-spectrum antibiotics
   E. oral broad-spectrum antibiotics and G-CSF

387. Which of the following statements about metastasis of breast cancer to the bone is true?
   A. Metastasis to the epidural spine is most commonly associated with worsening back pain in the supine position or with the Valsalva maneuver.
   B. Compression of the epidural spinal cord associated with breast cancer most commonly has a single site of vertebral metastasis.
   C. Radicular pain in the thoracic spine is typically unilateral.
   D. Pain from T12, L1 vertebral lesions is not associated with a referred pain pattern to the bilateral iliac crests or to the bilateral sacroiliac joints.

388. A 62-year-old man with limited-stage small cell lung cancer and proximal muscular weakness is most likely to have which of the following conditions?
   A. SIADH
   B. Myasthenia gravis
C. Cerebellar degeneration
D. Eaton-Lambert syndrome

389. A 3-year-old girl has Wilms tumor with a favorable histology and a positive surgical margin. CT scan of the chest does not reveal any pulmonary nodules. What cancer stage is most appropriate for the patient's condition?
   A. Stage I
   B. Stage II
   C. Stage III
   D. Stage IV

390. Which of the following types of cancer is most frequently associated with isolated hepatic metastases at presentation?
   A. Colorectal
   B. Esophageal
   C. Gastric
   D. Lung

391. Which of the following statements about the treatment of bone metastases secondary to breast cancer is true?
   A. Radiation therapy will achieve partial or complete pain relief within 4 weeks.
   B. Single-fraction irradiation provides equivalent results to protracted radiation treatment schedules for pain control durability and reduced risk of subsequent fracture.
   C. Metastatic sites with extraosseous bone involvement should be treated with 153Sm only, because localized external-beam irradiation is not beneficial.
   D. An 8-Gy dose of hemibody irradiation should be administered in a single fraction to the upper, middle, or lower hemibody regions for treatment of painful bony metastases.

392. A 35-year-old man sought advice about the increased risk of cardiac complications following chemotherapy. Eight years previously, he had been successfully treated for Hodgkin’s disease with six cycles of doxorubicin, bleomycin, vinblastine and dacarbazine, and mediastinal radiotherapy.
For how many years from the end of treatment will this increased risk persist?

A. 1–5
B. 6–10
C. 11–15
D. 16–20
E. >20

393. A 58-year-old man presented with haemoptysis, weight loss and worsening breathlessness. He was a lifelong heavy smoker. His chest X-ray was abnormal. A CT scan of chest and abdomen demonstrated a large mass in the right lower lobe invading into the mediastinum and pericardium, extensive mediastinal lymphadenopathy, and bone metastasis (T4, N3, M1b). Bronchoscopy and biopsy confirmed a squamous cell carcinoma. Mutation analysis revealed that EGFR and K-ras genes were both wild type.

What is the most appropriate first-line therapy?

A. docetaxel
B. erlotinib
C. gefitinib
D. gemcitabine and cisplatin
E. pemetrexed and cisplatin

394. Which of the following diagnostic tests is NOT included in the staging of small cell lung cancer?

A. CT scan of the chest and upper abdomen
B. Brain imaging
C. Bone scan
D. PET scan

395. Which of the following types of cancer is most commonly associated with myasthenia gravis?

A. Small cell lung cancer
B. Non-small cell lung cancer
C. Mesothelioma
D. Thymoma
396. A 55-year-old man underwent resection of a T2 clear cell renal carcinoma. What is the most likely pathogenesis?
   A. activating mutations of the VHL gene
   B. MET oncogene activity
   C. mutation of p53
   D. up-regulated expression of HIF-controlled genes
   E. von Hippel–Lindau syndrome

397. During evaluation of tumor biopsy specimens, which of the following markers can be used as a histochemical indicator of cell proliferation?
   A. Ki-67
   B. TP53
   C. c-myc
   D. Nuclear/cytoplasmic ratio

398. Which of the following statements about the effectiveness of $^{131}$I for treating thyroid cancer is true?
   A. Medullary carcinoma is treated more effectively than Hürthle cell carcinoma.
   B. The follicular variant of papillary carcinoma is treated more effectively than Hürthle cell carcinoma.
   C. Tall cell carcinoma is treated more effectively than the follicular variant of papillary carcinoma.
   D. Insular carcinoma is treated more effectively than the follicular variant of papillary carcinoma.

399. Which of the following processes is NOT commonly involved in the development of bone metastases?
   A. Avascular necrosis
   B. Activation of osteoclasts
   C. Cell adhesion molecules
   D. Chemotaxis of metastatic cancer cells
400. SBLA syndrome is another name of
   A. Lynch I
   B. Lynch II
   C. Li-Fraumeni syndrome
   D. Cowden's syndrome
   E. Peutz-Jegher's Syndrome
### KEY ANSWER

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