Chapter 89, Self-Assessment Questions

1. The woman at greatest risk for developing breast cancer is:
    A. African American aged 53 years with no family history of breast cancer
    B. Canadian Caucasian aged 53 years with grandmother having a history of breast cancer
    C. Ashkenazi Jew aged 53 years who tested negative for BRCA 1 and 2 mutations
    D. Hispanic aged 53 years with a history of atypical hyperplasia and a sister with breast cancer
    E. Asian aged 53 years who had taken oral contraceptives between 20 and 30 years of age

2. KA, a 58-year-old partner in a large accounting firm, had an abnormal lesion measuring approximately 1.2 cm detected by mammography biopsied. Pathological review confirmed a diagnosis in invasive breast cancer. Standard testing for receptors indicated ER positive, PR negative, and HER2 (1+ by IHC). The intrinsic subtype of this patient's breast cancer is:
    A. Luminal A
    B. Luminal B (HER2 negative)
    C. Luminal B (HER2 positive)
    D. HER2 enriched
    E. Basal-like

3. Complete workup of KA (previous question) indicated stage 1 breast cancer. With regards to this patient, the primary treatment modality is:
    A. Neoadjuvant therapy
    B. Surgery, sentinel node biopsy, and radiation (if BCS is performed)
    C. Adjuvant tamoxifen alone
    D. Trastuzumab monotherapy
    E. Trastuzumab + chemotherapy

4. If adjuvant therapy is indicated in KA (same patient), appropriate systemic treatment could include:
    A. Trastuzumab monotherapy (only) for 12 months
    B. Trastuzumab + lapatinib doublet for 12 months
    C. Surgical castration or LHRH agonist
    D. Cyclophosphamide + doxorubicin for four cycles, followed by trastuzumab for 12 months and anastrozole for 5 years
    E. Anastrozole for 5 years +/− cyclophosphamide/docetaxel for four cycles

5. A 36-year-old woman is diagnosed with stage 2, intrinsic subtype HER2-amplified (by FISH) breast cancer. Rational management of the disease in this patient could include:
    A. Pertuzumab + trastuzumab + docetaxel as first-line therapy
    B. Doxorubicin and cyclophosphamide with concurrent trastuzumab as systemic adjuvant therapy for four cycles; followed by trastuzumab alone to complete 1 year
    C. Lapatanib + trastuzumab as systemic adjuvant therapy
    D. Docetaxel + carboplatin + concurrent trastuzumab as systemic adjuvant therapy for four cycles; followed by trastuzumab alone to complete 1 year
    E. Doxorubicin + cyclophosphamide followed by 5 years of tamoxifen

6. The woman with the best overall prognosis is:
    A. 31 years old, stage 2, node-positive, triple-negative breast cancer
    B. 41 years old, inflammatory breast cancer
    C. 51 years old, stage 4 (bone only metastasis), ER-positive breast cancer
    D. 61 years old, stage 2, HER2-positive breast cancer
    E. 71 years old, stage 2, sentinel node positive, ER- and PR-positive breast cancer

7. Appropriate first-line adjuvant endocrine therapy for postmenopausal women is:
    A. Fulvestrant
    B. LHRH agonist + anastrozole
    C. Oophorectomy
    D. Megestrol acetate
    E. Letrozole or tamoxifen

8. Surgical castration is a treatment option for ER-positive metastatic and early breast cancers. When performed in the adjuvant setting, bilateral oophorectomy is likely to be associated with:
    A. Complete estrogen deprivation in postmenopausal women
    B. Inducing endometrial cancer in a small but significant number of premenopausal women
    C. Decreasing the incidence of contralateral breast cancer in premenopausal women
    D. Decreasing the incidence of skeletal-related events in postmenopausal women
    E. Reducing the risk for cardiovascular disease, cognitive impairment, and anxiety symptoms in premenopausal women

9. Estrogen deprivation, the mechanistic mode of all endocrine therapies, can be achieved by:
    A. Reducing circulating levels of estrogens with tamoxifen
    B. Blocking estrogen binding to ER with exemestane
    C. Inducing castrate levels of estrogens with goserelin postmenopausal women
    D. Downregulating ER with fulvestrant
    E. Inhibiting total body estrogen synthesis with ovariectomy

10. A 37-year-old woman has a large fungating mass on her left breast. Although infection is part of the differential diagnosis, tissue biopsy confirmed a diagnosis of inflammatory breast cancer. Additional studies indicated the tumor to be ER negative, PR weakly positive and HER2 negative with no evidence of metastasis. The surgical oncologist felt that breast conserving surgery was possible depending of the response to neoadjuvant therapy. The best tumor response is likely to be achieved with:
    A. Whole breast irradiation
    B. Tamoxifen
    C. LHRH agonist
    D. Doxorubicin + cyclophosphamide followed by paclitaxel
    E. Doxorubicin + cyclophosphamide followed by tamoxifen

11. A 43-year-old woman was diagnosed with stage 2, HER2 overexpressing breast cancer 28 months ago. She completed six cycles of adjuvant doxorubicin + cyclophosphamide and 12 months of

trastuzumab. Follow-up imaging studies indicated two new liver lesions. Results of the liver biopsy indicated recurrent breast cancer. The patient performance status is very good. The most appropriate strategy at this time is:

A.	Best supportive care only
B.	Resume trastuzumab monotherapy
C.	Doxorubicin + cyclophosphamide + trastuzumab for six cycles
D.	Lapatinib + pertuzumab
E.	Trastuzumab + pertuzumab + docetaxel

12. Treatment of elderly patients with breast cancer can, at times, be a difficult. For example, a 74-year-old grandmother is diagnosed with stage 2, luminal A breast cancer. Except for mild hypertension, severe osteoporosis and a surgically repaired hip the woman is otherwise quite active. Following surgical mastectomy, the most appropriate systemic adjuvant therapy is:

A. Tamoxifen for at least 5 years
B. One of the AIs for at least 5 years
C. Fulvestrant for at least 5 years
D. LHRH agonist
E. Paclitaxel for four cycles

13. Treatment of postmenopausal women with advanced breast cancer can be even more difficult than the above situation. For example, a 67-year-old grandmother is diagnosed with hormone receptor negative, HER2 positive breast cancer. Her medical history is significant for coronary artery disease with a mild decrease in cardiac ejection fraction, hypertension, and type 2 diabetes. Of the following chemotherapy regimens, the **best** treatment **option** for this patient is:

A. Gemcitabine only till disease progression or intolerable toxicity
B. Low-dose doxorubicin only till disease progression or impending cardiotoxicity
C. Vinorelbine + trastuzumab till disease progression
D. Epirubicin + cyclophosphamide + trastuzumab till disease progression or intolerable toxicity
E. Doxorubicin + paclitaxel + trastuzumab till disease progression or intolerable toxicity

14. A 44-year-old premenopausal woman was diagnosed with HER2 amplified metastatic breast cancer 7 months ago. She was being treated with the combination of trastuzumab, pertuzumab, and docetaxel when new metastasis was found in the liver which has resulted in decreased appetite, weight loss, and significant nausea. Her (ECOG) performance status is 2 and is disease related. Second-line therapy for her disease should be:

A. Trastuzumab + pertuzumab + an anthracycline
B. Trastuzumab + pertuzumab + bevacizumab
C. Lapatinib + capecitabine
D. Trastuzumab − emtansine
E. Trastuzumab − emtansine + paclitaxel

15. A 48-year-old woman was diagnosed with node-positive luminal A breast cancer in January 2012. Following surgical lumpectomy and radiation, she was treated four cycles of adjuvant doxorubicin and cyclophosphamide followed by four cycles of paclitaxel because of a high recurrence score. After completing the taxane, she was started on tamoxifen with plans of switching to an AI after 2 to 3 years to complete 5 years of the AI. After 2 years of tamoxifen, which she continues to tolerate well except for hot flashes. Switching to an AI at this time may be rational and appropriate. With regards to AI therapy:

  A. Her menopausal status is not an issue since she is now 50 years of age.
  B. Her menopausal status cannot be determined accurately because tamoxifen lowers the circulating estrogen levels.
  C. Her menopausal status will be accurately reflected by LH levels soon after menopause.
  D. Determination of her menopausal status is critical before AI therapy is initiated.
  E. Her menopausal status is certain to be postmenopausal because prior chemotherapy almost absolutely causes chemical castration.

Answers

1.   D
2.   B
3.   B
4.   E
5.   D
6.   E
7.   E
8.   C
9.   D
10.   D
11.   E
12.   A
13.   C
14.   D
15.   D