

Anti Cancer Drugs

Test your knowledge!

Q1: Resistance to which anticancer drug, used in leukemias, lymphomas, and breast cancer, is associated with increased production of dihydrofolate reductase?

- A. Doxorubicin
- B. Vinblastine
- C. 6-MP
- D. Cytarabine
- E. Methotrexate**

Q2: A patient undergoing cancer chemotherapy has an increase in urinary frequency with much discomfort. No specific findings are apparent on physical examination. Laboratory results include hematuria and mild leukopenia, but no bacteria or crystalluria. If the symptoms experienced by the patient are drug related, what is the most likely cause?

- A. Cyclophosphamide**
- B. 5-FU
- C. Methotrexate
- D. Prednisone
- E. Tamoxifen

Q3: The chemotherapy undertaken by this patient caused acute hemorrhagic cystitis. Which drug was most likely to be responsible for this toxicity?

- A. Cyclophosphamide**
- B. Doxorubicin
- C. Fluorouracil
- D. Methotrexate

Q4: What is the mechanism of action of vincristine?

- A. Mitosis inhibitors**
- B. Inhibits dihydrofolate reductase
- C. Cross links DNA
- D. Alkylates DNA

Q5: A child with acute lymphoblastic leukemia was started a Which acts by causing cross-links to form DNA?

- A. Cyclophosphamide**
- B. 5-Fluorouracil
- C. Vincristine
- D. Methotrexate

Q6: A 44-year-old man with acute lymphocytic leukemia is undergoing a multiagent chemotherapy protocol. Agents used include methotrexate. The cycle of medication will last 6 weeks. Which of the following tissues is most likely to experience toxic effects as a result of this therapy?

- A. Cartilages
- B. Long bones, legs
- C. Small bones, face
- D. Germinal epithelium**

Q7: Which of the following is anti-estrogen?

- A. Finasteride
- B. Cyproterone
- C. Tamoxifen**
- D. Mithramycin

Q8: A 5-year old male child with recurring fever over course of a month. Past medical history is significant for easy bruisability. A CBC revealed a white blood cell count 30,000 cells per microliter. A bone marrow biopsy confirmed the diagnosis of acute lymphoblastic leukemia. This child is started on a chemotherapeutic regimen. Which of the following chemotherapy drugs acts by causing cross links form in DNA?

- A. Vincristine
- B. 5-Fluorouracil
- C. Methotrexate
- D. Cyclophosphamide**

Q9: A 44-year old man with acute lymphocytic leukemia is undergoing a multi agent chemotherapy protocol. Agents used include methotrexate. The cycle of medications will last 6 weeks. Which only of the following tissues is most likely to be affected by the toxic effects of thus therapy?

- A. Epidermal layer, skin
- B. Long bones, legs
- C. Buccal mucosa**
- D. Small bones, face

Q10: A woman entering a cancer clinic concerned about her chance of developing breast cancer. Her mother died of the disease, and her sister has been diagnosed with the disease. A breast examination is negative. Which of the following might be used prophylactically in this woman?

- A. Clomiphene
- B. Finasteride
- C. Mithramycin
- D. Tamoxifen**

Q11: An adult patient is being treated for acute leukemia with a combination of anticancer drugs that includes cyclophosphamide, mercaptopurine, methotrexate, vincristine, and prednisone. He is also using ondansetron for emesis, a chlorhexidine mouthwash to reduce mucositis, and laxatives. The patient complains of "pins and needle" sensations in the extremities and muscle weakness. He is not able to execute a deep knee bend or get up out of a chair without using his arm muscles. He is also very constipated. If these problems are related to the chemotherapy, which of the following is the most likely causative agent?

- A. Cyclophosphamide
- B. Vincristine**
- C. Methotrexate
- D. Mercaptopurine

Q12: A 75-year old male patient presented with persistent fatigue, night sweats, fever, unexplained weight loss and swollen lymph nodes in his armpits. A diagnosis of non-Hodgkin lymphoma was made. In his treatment, allopurinol was used adjunctively to offset hyperuricemia due to tumor lysis. The dosage of which of the other anticancer drugs should be reduced to 25% of normal?

- A. Mercaptopurine**
- B. Fluorouracil
- C. Flutamide
- D. None of the above

Q13: Cancer patients being treated with Mercaptopurine may require a dosage adjustment if they are concurrently treated for which of the following?

- A. Constipation
- B. Malaria
- C. Chronic Gout**
- D. Arthritis

Q14: Which of the following chemotherapeutic drugs inhibits the polymerization of microtubules but is not associated with causing bone marrow suppression?

- A. Cyclophosphamide
- B. Vinblastine
- C. Vincristine**
- D. Cisplatin

Q15: Which of the following anti cancer agent can be given in the treatment of prostate cancer?

- A. Tamoxifen
- B. Actinomycin D
- C. Cyproterone acetate**
- D. Methotrexate

Q16: Which agent can be given as an adjuvant to anti cancer agents in the treatment of leukemia and lymphoma for the prevention of drugs-induced adverse effects such as allergic reactions, nausea, vomiting, etc?

- A. Methotrexate
- B. Tamoxifen
- C. Prednisone**
- D. Nitrogen Mustard

Q17: Which of the following acts by irreversibly binding to nucleic acids such as DNA via alkylating reaction in the treatment of leukemia and lymphoma?

- A. Mercaptopurine
- B. Nitrogen Mustard
- C. Cyclophosphamide
- D. B and C**

Q18: A 24-year-old man complains of night sweats, weight loss, and pruritus over several weeks. Physical exam shows nontender lymphadenopathy. A lymph node biopsy reveals Reed–Sternberg cells. He is started on a chemotherapy regimen including one drug that works primarily by trapping cells in the mitotic (M) phase of the cell cycle. Which drug is this?

- A. Bleomycin
- B. Cisplatin
- C. Vincristine**
- D. Methotrexate

Q19: A 54-year-old woman with a history of left-sided breast cancer has been in remission for 5 years following paclitaxel therapy coupled with surgical resection. She has now noticed a new lump in her left breast close to where the original tumor was excised. A biopsy reveals recurring cancer. After talking with her physician, she decided to undergo more chemotherapy. Her physician prescribes a drug, which interferes with microtubules. Which is a chemotherapy drug that disrupts the microtubule assembly?

- A. Cisplatin
- B. Docetaxel
- C. Erlotinib
- D. Vincristine**

Q20: A 42-year-old woman presents to the emergency department with vaginal bleeding for the past 2 days. Her last menstrual period was 1 week ago and has had regular cycles. She has a history of a hydatidiform mole 8 years ago. A b-hCG is 20,000. The diagnosis of choriocarcinoma is made and she is started on methotrexate. What is the mechanism of action of methotrexate?

- A. Alkylates DNA
- B. Inhibits dihydrofolate reductase**
- C. Inhibition of DNA polymerase
- D. Inhibits thymidylate synthase
- E. Inhibits topoisomerase II

Q21: A 66-year-old man with a history of gout was recently diagnosed with non-Hodgkin's lymphoma. Because of frequent gout attacks, he has been placed on allopurinol. He is started on medication for his lymphoma, and shortly after, he develops GI upset and elevated liver enzymes. Because of taking allopurinol, what medication should have been avoided in this patient?

- A. Methotrexate
- B. Bleomycin
- C. Mercaptopurine**
- D. 5-FU

