Scientific team

Pharmacology quiz

Athar's Batch

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1. A 59-year-old male patient has been a smoker for over 20 years and has a previous family history of coronary heart disease is at high risk for atherosclerotic cardiovascular disease (ASCVD). His lab tests show LDL-C levels of 179 mg/dL (high) despite high-dose atorvastatin therapy. The patient has normal HDL-C and triglycerides levels, consistent with familial hypercholesterolemia. Of the followings, which drug is BEST to be add as an adjunct lipid lowering agent to decrease the risk of ASCVD and effectively lower the patient's LDL-C levels?

A. Ezetimibe
B. Fenofibrate
C. Alirocumab
D. Gemfibrozil
E. Niacin

2. Your collaborator brings you leukemic cells treated in vitro with a chemotherapy drug. You assess cell cycle and DNA damage. Your results demonstrate that the cells have 4N DNA content suggesting G2/M arrest, and the cells have high extent of DNA double-stranded breaks. Which class of therapeutics did your collaborator most likely treat the cells with?

A. Microtubule poisons
B. Antimetabolites
C. Topo II poisons
D. Tyrosine kinase inhibitors
E. Cell wall inhibitors

3. A 12-year-old boy presented to the clinic with extremely painful limbs and was diagnosed with acute lymphoblastic leukemia (ALL). Lab analysis showed he is Philadelphia chromosome negative (Ph-) and has a high population of CD20-positive leukemia cells. Which of the following drug combinations will benefit this patient the most?

A. Methotrexate, cyclophosphamide, imatinib and prednisone.
B. Idarubicin, vinblastine, rituximab and prednisone.
C. Doxorubicin, vincristine, imatinib and rituximab.
D. Daunorubicin, vincristine, cytarabine and prednisone.
E. Cyclophosphamide, vincristine, doxorubicin and dexamethasone

4. Immunosuppressants exert their effects on different cell targets that eventually lead to suppression of the immune system. Below listed 5 examples of immunosuppressants and their potential targets. Identify the wrong match.

A. Belatacept:CD20
B. Mycophenolate: inosine monophosphate dehydrogenase
C. Bortezomib: proteasomes
D. Basiliximab: IL-2 receptor
E. Cyclosporine:calcineurin

5. Several parenteral anticoagulants are available for the rapid treatment and prevention of thromboembolic disorders. List below are different parenteral anticoagulants matched with a pharmacologic characteristic. Identify the WRONG match.

A. Unfractionated heparin - Safe to use during pregnancy.
B. LMWHs - requires less frequent testing of coagulation values.
C. Bivalirudin - inhibits the glutamate carboxylation of coagulation factor X
D. Argatroban - approved for the treatment of Heparin-Induced Thrombocytopenia.
E. Fondaparinux - potentiates the neutralization of factor Xa by antithrombin III.

6. A 22-year-old student returning from Sudan developed high-grade fever and flu-like symptom. Her blood smear analysis has revealed Plasmodium ovale trophozoites shown in the image. Which of the following treatment options is best to treat malaria in this patient?

A. Hydroxychloroquine
B. Hydroxychloroquine + primaquine
C. Hydroxychloroquine + mefloquine
D. Chloroquine + paromomycin
E. Chloroquine + doxycycline

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7. Which of the following is responsible for the hemorrhagic bladder injury caused by cyclophosphamide treatment?

A. Aldophosphamide

B. Cyclophosphamide itself

C. Acrolein

D. 4-OH cyclophosphamide

E. Phosphoramide mustard

Answers

1.C

2.C

3.A

4.A

5.C

6.B

7.C