



Scientific team

### Pharmacology HLS – Hope Batch Quiz (2020)

1. A 62-year-old male patient with atrial fibrillation taking warfarin for stroke prevention in presents to his primary care physician with an elevated INR of 7.5 (normal therapeutic range: 2-3) without bleeding. He was instructed to hold his warfarin dose and was given oral vitamin K1. When would the effects of vitamin K1 on the INR most likely to be noted in this patient?

- A. 24 hours
- B. 7-10 days
- C. 6 hours
- D. 1 month
- E. 1 hour

2. A 55-year old female patient survived an acute, ST-elevation myocardial infarction (MI) and was started on unfractionated heparin subcutaneously. 2-days following recovery, the patient developed chills, fever and dyspnea which were accompanied by marked swelling of the left calf. Doppler ultrasound confirmed DVT of the left lower limb. Lab tests showed extremely low platelet count (thrombocytopenia). No bleeding was identified. The best management option for this patient is?

- A. Switch to giving heparin subcutaneously
- B. Stop heparin therapy and administer protamine sulfate
- C. Stop heparin therapy and replace with argatroban.
- D. Stop heparin therapy and start oral warfarin.
- E. Switch to using low-molecular weight heparin (LMWH)

3. In the laboratory, you are trying to identify the name of drug X. You have been given the following information: (1) drug X is a naturally derived anticoagulant. (2) drug X is approved for the prophylaxis against postoperative venous thrombosis. (3) The drug is chiefly administered subcutaneously. After performing an experiment to study its mechanism of action, you observed that drug X inactivates factor Xa but does not avidly affect thrombin activity. Accordingly, you highly suspect that drug X is \_\_\_\_\_?

- A. Heparin
- B. Enoxaparin
- C. Argatroban
- D. Fondaparinux
- E. Idarucizumab

4. As part of the research and development team in a pharmaceutical company, you were appointed to develop new antiplatelet agents. You start by identifying possible druggable targets that are involved in platelet plug formation and then provide several designs to develop drugs that act as antiplatelets. Which of the following potential drugs will be included in your proposal:

- A. Prostacyclin (PG I<sub>2</sub>) receptor agonist
- B. Cyclooxygenase II (COX-II) selective inhibitor
- C. Thromboxane A<sub>2</sub> analogue
- D. Phosphodiesterase III activator
- E. P2Y<sub>12</sub> positive allosteric modulator



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5. A 58-year-old female patient is on clopidogrel therapy for months to reduce the chance of myocardial infarction after a history of previous heart attacks. The patient started complaining from gastric acid reflux and her family doctor started omeprazole therapy. She was referred to you for consultation since you are an expert clinical pharmacologist. What should be your best approach for this patient?

- A. The patient should decrease the dose of clopidogrel
- B. The patient should immediately stop taking clopidogrel
- C. The patient should keep taking clopidogrel with no change to the dose
- D. The patient should increase the dose of clopidogrel
- E. Omeprazole is absolutely contraindicated while on clopidogrel therapy

6. A patient has been taking ferrous sulfate 325 mg twice daily for two weeks and is complaining of a bad taste every time she takes the medicine. Which once-daily, oral iron formulation would improve tolerability and provide similar total daily dose of elemental iron as twice-daily ferrous sulfate?

- A. Ferrous gluconate 100 mg
- B. Ferric ammonium citrate 25 mg
- C. Polysaccharide-iron complex 150 mg
- D. Iron dextran 150 mg
- E. Ferrous sulfate, anhydrous 142 mg

7. A 64-year-old female patient underwent ileal resection. A few months following surgery, she started complaining of chronic fatigue, tingling and numbness of her fingers (peripheral neuropathy), hair loss and altered mental status. Her lab tests were as follows: Hb: 6.4 g/dL; MCV: 112 fL/cell. Which of the following formulations is best to treat her condition?

- A. Cyanocobalamin (orally)
- B. Hydroxocobalamin (IM)
- C. Carbonyl iron (orally)
- D. Folic acid (orally)
- E. Erythropoietin (IV)

Answers:

- 1: A
- 2: C
- 3: B
- 4: A
- 5: D
- 6: C
- 7: B