

## Self-Assessment Test

### Pharmacist Essentials in Managing Patients with Acute Coronary Syndrome: ACS Pathophysiology and Pharmacology of Antithrombotic Agents

This program is located at [www.symposia.ashp.org/acs-essentials](http://www.symposia.ashp.org/acs-essentials)

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This self-assessment test has been provided as a study aid only. At the conclusion of the internet-based program, click on "Take CE Test" to proceed to the ASHP CE Testing Center and take the on-line program post-test. You may print your CE statement immediately after successful completion of the post-test.

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**There are a total of 10 questions associated with this self-assessment test.**

#### Questions 1-3 refer to the following case:

WF is a 68 year old male who was awakened by severe chest pain radiating up to his jaw and down his left arm. He ranked the pain as 9 out of 10. He was also short of breath and was sweating. By the time he went to the ER 4 hours had passed. His troponin was elevated and his EKG showed ST segment depression in lead three. He has a past medical history of hypertension, diabetes mellitus type 2, depression, and dyslipidemia. His medications at home include aspirin, enalapril, glipizide, sertraline, and simvastatin.

1. Which of the following represents the pathophysiology of WF's primary problem?
  - A. Increase in myocardial oxygen demand in the setting of a fixed decrease in supply
  - B. Impaired myocardial contractility
  - C. Valve regurgitation leading to arterial vasodilation
  - D. Acute plaque rupture with platelet and fibrin accumulation
  
2. Which of the following represents the best assessment of WF's current condition?
  - A. Stable angina
  - B. Unstable angina
  - C. Non-ST-segment elevation myocardial infarction
  - D. ST-segment elevation myocardial infarction
  
3. What would be WF's TIMI risk score?
  - A. 2 points – low risk
  - B. 3 points – intermediate risk
  - C. 4 points - intermediate risk
  - D. 5 points – high risk



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4. Which of the following represents the correct sequence in which thrombus forms after coronary artery plaque rupture?
  - A. Platelet adhesion, platelet activation, platelet aggregation, and fibrin incorporation
  - B. Platelet activation, platelet aggregation, platelet adhesion, and fibrin incorporation
  - C. Platelet aggregation, platelet adhesion, fibrin incorporation, and platelet activation
  - D. Platelet adhesion, fibrin incorporation, platelet aggregation, and platelet activation
  
5. Which of the following agents can provide its anticoagulant effect without first binding to antithrombin?
  - A. Dalteparin
  - B. Fondaparinux
  - C. Bivalirudin
  - D. Unfractionated heparin
  
6. Which of the following agents has an unpredictable anticoagulant response and therefore requires close therapeutic monitoring?
  - A. Fondaparinux
  - B. Bivalirudin
  - C. Enoxaparin
  - D. Unfractionated heparin



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#### Questions 7 and 8 refer to the following case:

TP is a 56 year old female who presented to the ER with unstable angina. She was started on aspirin 325 mg first dose, then 81 mg daily, clopidogrel 300 mg first dose, then 75 mg daily, metoprolol 50 mg twice daily, IV nitroglycerin 40 mcg/min, and enoxaparin 1 mg/kg twice daily. She is in the cardiac cath lab and the decision has been made to do percutaneous coronary intervention with stent placement. It has been 10 hours since her last dose of enoxaparin.

7. Which of the following represents the best current management of her anticoagulation?
  - A. Give her unfractionated heparin 10,000 units IV now
  - B. Give her enoxaparin 0.3 mg/kg IV now
  - C. Give her fondaparinux 2.5 mg subcutaneously now
  - D. Give her enoxaparin 1 mg/kg subcutaneously now
  
8. Which of the following monitoring options would be needed in TP at this time?
  - A. aPTT (activated partial thromboplastin time)
  - B. Anti-Xa level
  - C. ACT (activated clotting time)
  - D. No therapeutic monitoring is needed
  
9. Which of the following represents the best description of the pharmacology of LMWHs?
  - A. Inhibits 3-4 molecules of factor Xa to every one molecule of factor IIa (thrombin)
  - B. Inhibits factor Xa and factor IIa equally
  - C. Inhibits only factor Xa
  - D. Inhibits only factor IIa
  
10. Which of the following trials represents the clinical evidence that supports the use of enoxaparin in medically managed NSTEMI ACS patients?
  - A. REPLACE-2
  - B. ESSENCE
  - C. PENTUA
  - D. TIMI 20



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