

## CME/CE QUESTIONS

**Continuing Medical Education Accreditation**

The University of Cincinnati College of Medicine designates this educational activity for a maximum of two (2) *AMA PRA Category 1 CME credit(s)*<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in this activity.

The University of Cincinnati College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

**Continuing Pharmacy Education Accreditation**

*Pharmacy Times/Ascend Media* Office of Continuing Professional Education is accredited by the Accreditation Council for Pharmacy Education (ACPE) as a provider of continuing pharmacy education. This program is approved for 2 contact hours (0.2 CEUs) under the ACPE universal program number of 290-999-06-011-H01.

**Instructions**

After reading "Emerging Antithrombotic Therapies: New Developments in Acute Care Medicine," complete the program evaluation and select the 1 best answer to each of the following questions. A statement of continuing education hours will be mailed to those who successfully complete (with a minimum score of 70%) the examination at the conclusion of the program.

1. **Which is true concerning myocardial infarction (MI)?**
  - a) In the United States, one third of MI patients die before they reach the hospital.
  - b) In the United States, half of MI patients have an established history of angina.
  - c) MI accounts for 75% of total cardiovascular mortality worldwide.
  - d) After MI, the risk of stroke, disabling heart failure, or second MI within 6 months is higher in women than in men.
2. **Among patients with acute coronary syndromes (ACS):**
  - a) the median age is 48 years.
  - b) the in-hospital mortality rate is approximately 15%.
  - c) the actual incidence of unstable angina (UA) is believed to be about twice the reported incidence.
  - d) total direct medical costs in the United States are approximately \$20 billion.
3. **Recommended strategies for managing ACS include:**
  - a) coronary artery bypass graft early in evolving MI for patients who are not candidates for medical thrombolysis or percutaneous coronary intervention (PCI).
  - b) PCI only if symptoms persist after 24 hours of thrombolytic therapy.
  - c) antiplatelet therapy with aspirin instead of anticoagulation with heparin products.
  - d) treadmill-exercise echocardiography to assess typical angina in a middle-aged man.
4. **ACS comprise:**
  - a) UA and ST-segment elevated myocardial infarction (STEMI), but not non-ST-segment elevated myocardial infarction (NSTEMI).
  - b) UA and NSTEMI, but not STEMI.
  - c) STEMI and NSTEMI, but not UA.
  - d) UA, STEMI, and NSTEMI.
5. **The event that precipitates ACS is:**
  - a) rupture of an atherosclerotic plaque.
  - b) fat embolism obstructing the coronary arteries.
  - c) platelet abnormalities.
  - d) coagulation factor abnormalities.
6. **The coagulation cascade includes all of the following events except:**
  - a) tissue factor from the exposed vascular matrix activates factor VII to VIIa.
  - b) VIIa activates X, and Xa works with Va to activate II to IIa (thrombin).
  - c) IIa stimulates platelet activity and fibrin formation.
  - d) antithrombin III (ATIII) deactivates platelets to stop the process.
7. **Unfractionated heparin (UFH):**
  - a) neutralizes ATIII.
  - b) is contraindicated in patients taking aspirin.
  - c) can be used in conjunction with fibrin-specific agents and in ACS patients at high risk for thromboembolic complications.
  - d) cannot be used if cardiac catheterization is planned.
8. **In terms of safety in ACS patients receiving UFH:**
  - a) the incidence of heparin-induced thrombocytopenia (HIT) is 5% to 10%.
  - b) HIT is associated with an increased risk of thrombotic events.
  - c) monitoring is by prothrombin time.
  - d) monitoring is by bleeding time.
9. **Compared with UFH, low molecular weight heparins (LMWH):**
  - a) are more homogeneous and have more reliable pharmacokinetics.
  - b) carry the same risk of HIT but lower risk of significant bleeding.
  - c) require the same type of laboratory monitoring.
  - d) can be more easily neutralized in case of overdose.

**10. Fondaparinux is:**

- a) a synthetic replicate of endogenous heparin.
- b) an inhibitor of ATIII.
- c) administered orally, once daily.
- d) approved for treatment of HIT.

**11. In a clinical trial of fondaparinux versus the LMWH enoxaparin in high-risk patients with UA or NSTEMI, those treated with fondaparinux showed:**

- a) a significantly lower incidence of the combined outcome of death or MI or refractory ischemia at 9 days.
- b) a significantly lower incidence of MI at 30 days.
- c) the same incidence of death or MI or refractory ischemia at 9 days.
- d) the same incidence of death at 30 days.

**12. In the same fondaparinux versus enoxaparin trial:**

- a) the incidence of bleeding complications was the same for both treatment groups at all time points.
- b) outcomes among patients who underwent PCIs were significantly better in the fondaparinux group.
- c) mortality at 180 days was nonsignificantly lower in the enoxaparin group.
- d) bleeding complications were associated with higher rates of death, reinfarction, and stroke within both treatment groups.

**13. In a trial of STEMI patients randomized to fondaparinux versus "usual care" (UHF or placebo), treatment with fondaparinux was associated with a significantly lower incidence of:**

- a) death or reinfarction at 9 days, 30 days, and end of study.
- b) severe bleeding in the subset of patients undergoing PCI.
- c) guide-wire thrombosis in the subset of patients undergoing PCI.
- d) All of the above

**14. In which group of ACS patients is fondaparinux least likely to be advantageous in comparison with UHF or LMWH?**

- a) Those with renal dysfunction.
- b) Those in whom PCI is not feasible.
- c) Those treated with early invasive strategies.
- d) Those at increased risk of bleeding complications.

**15. Among patients who survive acute MI:**

- a) approximately half will die within 1 year.
- b) mortality within 1 year is higher among women than among men.
- c) the risk of illness and death is 3 to 5 times higher than in the general population.
- d) anticoagulant therapy must be continued for life.

**16. In clinical trials of enoxaparin versus UHF in patients with ACS:**

- a) enoxaparin was used instead of but not in combination with a glycoprotein IIb/IIIa inhibitor.
- b) enoxaparin was associated with a 20% lower risk of death and serious cardiac ischemic events.
- c) there was no significant difference in the incidence of death or recurrent ischemic events at 30 days.
- d) outcomes were better with enoxaparin at 30 days, but there were no significant differences thereafter.

**17. Which statement is true concerning costs of anti-coagulant therapy in ACS?**

- a) Acquisition cost is higher with enoxaparin than with UHF, but overall costs are lower.
- b) Acquisition cost is higher with enoxaparin than with UHF, but overall costs are the same.
- c) Acquisition cost and overall costs are higher with enoxaparin than with UHF, but the clinical advantages outweigh cost considerations.
- d) There are no firm data on the economic impact of anticoagulation with enoxaparin versus UHF.

**18. Fondaparinux works by:**

- a) directly activating factor Xa.
- b) directly inactivating factor Xa.
- c) decreasing the ability of antithrombin III to inactivate factor Xa.
- d) increasing the ability of antithrombin III to inactivate factor Xa.

**19. Fondaparinux:**

- a) undergoes hepatic excretion.
- b) can be administered on a once-weekly basis.
- c) is unlikely to induce thrombocytopenia.
- d) is significantly more effective than enoxaparin in treating deep vein thrombosis.

**20. With regard to the use of fondaparinux versus enoxaparin in ACS:**

- a) incidence rates of death or recurrent or refractory ischemia are similar.
- b) the incidence of major bleeding is slightly worse with fondaparinux.
- c) fondaparinux offers significant advantage in patients undergoing PCI.
- d) total costs for anticoagulation are significantly lower with fondaparinux.

# CME EVALUATION

## CME TEST FORM

Emerging Antithrombotic Therapies: New Developments in Acute Care Medicine

Please circle your answers:

1. a b c d
2. a b c d
3. a b c d
4. a b c d
5. a b c d
6. a b c d
7. a b c d
8. a b c d
9. a b c d
10. a b c d
11. a b c d
12. a b c d
13. a b c d
14. a b c d
15. a b c d
16. a b c d
17. a b c d
18. a b c d
19. a b c d
20. a b c d

(PLEASE PRINT CLEARLY)

Name/Degree \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State/ZIP \_\_\_\_\_

Daytime Phone \_\_\_\_\_

Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Sponsored by the University of Cincinnati for  
Two (2) AMA PRA Category 1 credit(s)<sup>TM</sup>.

Release Date: December 1, 2006

Expiration Date: December 1, 2007

## CME Activity Evaluation

### Activity Evaluation

How long did it take you to complete this activity?  
\_\_\_\_\_ minutes

How well did this activity achieve its educational objectives?

Very well     Well     Somewhat     Not at all

What overall grade would you assign this activity?

A     B     C     D

Did this activity exhibit promotional bias for any pharmaceutical agents?     Yes     No

Will you make changes in your practice as a result of the information presented in this lesson?

Yes     No

### Answer Form Instructions: Testing and Grading Procedures

1. Each participant achieving a passing grade of 70% or higher on any examination will receive an official computer form stating the number of CME credits earned. This form should be safeguarded and may be used as documentation of credits earned.
2. Participants receiving a failing grade on any exam will be notified and permitted to take 1 reexamination at no cost.
3. All answers should be circled on the answer form.
4. To receive credit certification electronically, please provide your e-mail address. Detach and mail or fax this page to: University of Cincinnati, Office of CME, PO Box 670556, Cincinnati, OH 45267-0556; phone: 513-558-7277; fax: 513-558-1708. Please print clearly to ensure receipt of CME credit.

Proj A164

# CE EVALUATION

## PROGRAM EVALUATION

Please mark your level of agreement with the following statements.

(4 = Strongly Agree; 0 = Strongly Disagree)

- 1) Met its stated objectives **4 3 2 1 0**
- Described the medical and economic cost burden of acute coronary syndromes (ACS) and related thrombotic illnesses. **4 3 2 1 0**
  - Discussed the older and emerging acute care therapies for ACS. **4 3 2 1 0**
  - Compared the safety and cost-effectiveness of the newer ACS pharmacotherapies, the pentasaccharide factor Xa inhibitors. **4 3 2 1 0**
  - Understood the formulary issues involved in ACS treatment. **4 3 2 1 0**
- 2) Was well organized **4 3 2 1 0**
- 3) Contributed to my knowledge **4 3 2 1 0**
- 4) Presented current and relevant information **4 3 2 1 0**
- 5) Presented information in a fairly balanced and noncommercial manner **4 3 2 1 0**
- 6) Offered information useful in my professional practice **4 3 2 1 0**
- 7) Provided new insights into contemporary pharmacy practice **4 3 2 1 0**

### Answer Form Instructions: Testing and Grading Procedures

1. Each participant achieving a passing grade of 70% or higher on any examination will receive an official computer form stating the number of CE credits earned. This form should be safeguarded and may be used as documentation of credits earned.
2. Participants receiving a failing grade on any exam will be notified and permitted to take 1 reexamination at no cost.
3. All answers should be recorded on the answer form. Please print clearly to ensure receipt of CE credit.
4. To receive credit certification electronically, please provide your e-mail address. Detach and mail completed exam form with your \$10.00 payment to *Pharmacy Times*, 405 Glenn Drive, Suite 4, Sterling, VA 20164-4432; or fax to 703-404-1801.
5. Take the test online for FREE at [www.pharmacytimes.com](http://www.pharmacytimes.com) and receive immediate grading and CE credits, and download your CE statement of credit.

**Please photocopy the test form for additional test takers.**

(PLEASE PRINT CLEARLY)

Name/Degree \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State/ZIP \_\_\_\_\_

Daytime Phone \_\_\_\_\_

Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Check (payable to *Pharmacy Times*)

Credit Card (check one)

VISA

MasterCard

American Express

SSN \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Credit Card Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Signature (REQUIRED) \_\_\_\_\_

**Sponsored by *Pharmacy Times*/Ascend Media Office of Continuing Professional Education for 2 contact hours (0.2 CEUs) of ACPE credit. Expiration Date: December 1, 2007**

### ANSWER CARD

Please circle your answers:

1	2	3	4	5	6	7	8	9	10
<b>a</b>									
<b>b</b>									
<b>c</b>									
<b>d</b>									
11	12	13	14	15	16	17	18	19	20
<b>a</b>									
<b>b</b>									
<b>c</b>									
<b>d</b>									

**PROJ A164**