CME Test Questions
PREVENTION OF THROMBOEMBOLIC EVENTS

1. Each year the number of people who are diagnosed with objectively confirmed venous thromboembolism (VTE) is _______.

a. about 0.2% to 20.3% of the general population
b. about 1 to 2 per 1000 people in the general population
c. about 60,000 to 100,000 people in the general population
d. about less than 1 per 1000 people in the general population

2. According to one study of 51,645 hospitalized patients over a 21-month period, pulmonary embolism (PE) was observed at autopsy in 15% (59 of 404) of all patients on whom autopsies were performed and about _______ of all in-hospital deaths from PE occurred in nonsurgical patients.

a. 10%
b. 19%
c. 37%
d. 75%

3. Which of the following statements is true?

a. Of all patients with VTE, about two thirds have deep vein thrombosis (DVT) alone, while one third also have PE.
b. Of all patients with VTE, about one third have DVT alone, while two thirds also have PE.
c. Studies have shown that PE is correctly assigned as the cause of death on the death certificate in over 95% of these cases.
d. Classic symptoms of PE often are present in patients before death, including dyspnea, chest pain, and hemoptysis.

4. Postthrombotic syndrome (PTS) occurs in one third of patients after a symptomatic episode of DVT and is characterized by which of the following chronic leg symptoms?

a. Persistent pain and swelling
b. Cramping and skin discoloration
c. Necrosis and ulceration of the affected limb
d. All of the above

5. Applying an 8-factor risk assessment strategy to identify patients at risk for DVT and PE, which of the following are considered major risk factors for VTE?

a. Cancer, prior VTE, and hypercoagulability
b. Advanced age, obesity, bed rest, and the use of hormone-replacement therapy or oral contraceptives
c. All the above
d. None of the above

6. Interpretation of which of the following objective measures will be influenced by the knowledge of a patient's risk factors for VTE?

a. D-dimer
b. Venous ultrasonography
c. Ventilation-perfusion scanning
d. All of the above

7. Results of the 10 early trials of unfractionated heparin (UFH) _______.

a. clearly demonstrated the efficacy of smaller dosage, administered TID
b. clearly demonstrated the efficacy of larger dosage, administered BID
c. showed the value of either of the above regimens
d. were conflicting and inconclusive

8. In subsequent meta-analysis of the above 10 trials, UFH and low-molecular-weight heparin (LWMH) were shown to reduce risk of DVT and PE, compared to placebo or no treatment, by _______.

a. 30% to 40% and 30%, respectively
b. 40% to 50% and 40%, respectively
c. 50% to 60% and 50%, respectively
d. 60% to 70% and 60%, respectively

9. The prophylaxis in MEDical patients with ENOXaparin (MEDENOX) study differed from previous studies in that it included well-defined categories of patients. In a comparison of 20 mg and 40 mg dosages of the study drug at 14 days, MEDENOX found _______.

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a. no difference between the 2 dosages
b. significant difference (compared to placebo) at 40 mg, but not at 20 mg
c. significant difference (compared to placebo) at 20 mg, but not at 40 mg
d. significant difference (compared to placebo) at both dosages

10. In the ARixta for ThromboEmbolism prevention in a Medical Indications Study (ARTEMIS) of patients ≥60 years with heart failure, acute or chronic respiratory disease, or acute infection or acute inflammatory disease, the investigated drug, a factor Xa inhibitor, reduced the composite end point of DVT and/or PE _______.
a. from 13.5% to 8.6%
b. from 12.5% to 7.6%
c. from 11.4% to 6.6%
d. from 10.5% to 5.6%

11. The Seventh Conference on Antithrombotic and Thrombolytic Therapy of the American College of Chest Physicians (ACCP) guidelines strongly recommend the use of pharmacologic prophylaxis in patients with acute medical disease and in patients who _______.
a. are postsurgery and have 2 of the risk factors listed below
b. are bedridden and have 1 of the risk factors listed below
c. have 1 or more of the risk factors listed below
d. have 2 or more of the risk factors listed below (Risk factors include: sepsis, active cancer, previous VTE, acute neurologic disease and inflammatory bowel disease.)

12. Primary end points in MEDENOX, PREVENT, and ARTEMIS studies were based upon _______.
a. both venography and compression ultrasonography in the 3 trials
b. venography in MEDENOX and ARTEMIS, and compression ultrasonography in PREVENT
c. venography in all 3 trials
d. ultrasonography in all 3 trials

13. Incidence of VTE among medically ill patients is estimated by Gerotziafas et al to be _______.
a. 13% to 18%
b. 18% to 23%
c. 23% to 28%
d. 28% to 33%

14. The rate of DVT in medical patients in the intensive care unit, as reported by Hirsch et al, was unexpectedly high, despite the fact that prophylaxis was administered to 61% of those patients. Which of the following statements reflects the results of the observation of 100 patients examined with ultrasound?
a. One fourth showed DVT, with one third of those involving proximal lower-extremity DVT.
b. One third showed DVT, with one half of those involving proximal lower-extremity DVT.
c. One half showed DVT, with one quarter of those involving proximal lower-extremity DVT.
d. One half showed DVT, with one third of those involving proximal lower-extremity DVT.

15. The DVT FREE epidemiologic study determined the most frequent comorbidities in the 42% of patients diagnosed while in the hospital who had received prophylaxis within 30 days before the diagnosis to be _______.
a. congestive heart failure, history of stroke, surgery within 60 days, and obesity
b. surgery within 30 days, diabetes, immobility within 3 months, and history of stroke
c. congestive heart failure, diabetes, immobility within 60 days, and obesity
d. hypertension, surgery within 3 months, immobility within 30 days, cancer, and obesity

16. In the MEDENOX trial, 2 separate doses of enoxaparin (20 and 40 mg/d) were compared with placebo in medical patients. The higher dosage of enoxaparin, compared to placebo, reduced risk of VTE from 14.9% to _______.
a. 5.5%
b. 7.2%
c. 8.9%
d. 10.1%

17. In patients undergoing hip or knee replacement surgery, Geerts et al, in their paper, "Prevention of Venous Thromboembolism," recommend the use of LMWH, fondaparinux, or adjusted-dose vitamin K antagonists for at least how long?

a. 5 days
b. 7 days
c. 10 days
d. 14 days

18. The McGarry and Thompson retrospective study compared inpatients treated with enoxaparin with patients undergoing no treatment and showed a _______ reduction of risk of VTE for those treated with the LMWH.
a. 56%
b. 63%
c. 70%
d. 77%

19. Criteria for quality care, as defined in the Attree study of criteria used to represent and evaluate quality care, include all but which of the following?
a. Adherence to best practices and protocols
b. Ongoing interaction with patient and family in decision and treatment process
c. Competent staff and ample resources
d. Good health outcomes

20. ACCP guidelines describe treatment recommendations for 8 particularly high-risk groups. These include which of the following?
a. Laparoscopic procedures
b. Long-distance travel
c. Both a and b
d. Neither a nor b

21. The Geerts table, introduced at the Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy, assigns 4 levels of thromboembolism risk in surgical patients, from "low" to "very high," recommending separate prophylaxis protocols for each level. Which of the following is included in the category "very high?"
a. Major surgery at age 40–60 with other risk factors
b. Hip or knee arthroplasty, hip fracture surgery
c. Surgery with multiple risk factors
d. Both b and c, but not a

22. Thromboembolism risk in medical patients is characterized as low, moderate, or high by the 2003 Rahim matrix. In that table, major illness (eg, heart or lung disease, cancer, inflammatory bowel disease, rheumatologic disease, severe infection, age >70) is assigned which level of risk?
a. Low
b. Moderate
c. High
d. Very high

23. The traditional standard pharmacologic therapy for VTE has included ______.
a. inpatient IV infusion of LMWH
b. inpatient IV infusion of UFH
c. administration of warfarin alone
d. none of the above

24. Which of the following are the advantages of LMWH over UFH?
a. Predictability of anticoagulant response and ease of administration
b. Suitability for outpatient use and improved cost-to-benefit ratios
c. Both a and b
d. Neither a nor b

25. A difference between the 1996 Leizorovicz and Siragusa meta-analyses of benefits of LMWHs compared with UFH was that _______.
a. Leizorovicz found significantly lower recurrence of VTE in blinded studies
b. Siragusa found significantly lower recurrence of VTE in blinded studies
c. Leizorovicz found significantly lower recurrence of VTE in all studies
d. Siragusa found significantly lower recurrence of VTE in all studies

26. In a study of hospitalized patients with either severe respiratory disease or heart failure in which LMWH was compared with UFH for the prevention of VTE, the incidence of VTE was reported as _______.
a. 10.4% in patients receiving LMWH and 8.4% in patients receiving UFH
b. 8.4% in patients receiving LMWH and 10.4% in patients receiving UFH
c. 6.4% in patients receiving LMWH and 12.4% in patients receiving UFH
d. 12.4% in patients receiving LMWH and 6.4% in patients receiving UFH

27. In the Segal et al analysis of outpatient studies, median hospital stays and cost savings for patients receiving LMWH, compared to those receiving UFH, were _______.

a. 2.7 days vs 6.5 days with a median cost savings of >$1500
b. 3.7 days vs 6.5 days with a median cost savings of >$1200
c. 4.7 days vs 6.5 days with a median cost savings of >$900
d. 5.7 days vs 6.5 days with a median cost savings of >$400

28. The use of LMWH followed by a vitamin K antagonist, such as warfarin, for up to 6 months is appropriate in preventing thrombus formation and embolism in most patients except _______.

a. patients with prosthetic heart valves or atrial fibrillation
b. patients at risk for excessive bleeding
c. patients at risk for heparin-induced thrombocytopenia
d. both a and b

29. Although warfarin can be used for long-term thromboprophylaxis, it can be difficult to use for which of the following reason(s)?

a. Variability in dose response must be carefully monitored.
b. Potential interaction with other drugs
c. A narrow therapeutic window exists for its use.
d. Frequent international normalized ratio (INR) monitoring is needed when warfarin therapy is started or changed.
e. All of the above

30. According to the findings of the LONFLIT3 study, which of the following statements is true?

a. LMWH was found to be more effective than aspirin in subjects at high risk for DVT after long (>10 hours) airplane flights.
b. LMWH was found to be less effective than aspirin in subjects at high risk for DVT after long (>10 hours) airplane flights.
c. LMWH was found to be equally as effective as aspirin in subjects at high risk for DVT after long (>10 hours) airplane flights.
d. No gastrointestinal symptoms were reported in patients who received aspirin therapy.

31. One study of 1892 patients treated with intermittent pneumatic compression following gynecologic surgery found that patients with which of the following independent risk factor(s) should be considered for more intense VTE prophylaxis regimens?

a. Patients with cancer
b. Patients with a history of DVT
c. Patients at age ≥60 years
d. All of the above

32. Two recent studies described in the article on the use of inferior vena cava (IVC) filters in patients with multiple trauma reported which of the following finding(s)?

a. This approach was simple and safe.
b. The use of IVC filters prevented fatal PE.
c. The use of IVC filters served as an effective bridge to anticoagulation therapy.
d. All of the above

33. True or false: DVT and PE can develop spontaneously, or they can result from medical circumstances such as surgery, prolonged bed rest, or trauma.

a. True
b. False

CME Test Answer Sheet and Evaluation Form for PREVENTION OF THROMBOEMBOLIC EVENTS

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PRETEST ASSESSMENT: Please rate your current knowledge of Prevention of Thromboembolic Events on a scale of 1 to 5, with 1 the lowest and 5 the highest. **1 2 3 4 5**

CME TEST

(*Please circle correct answers*)

1. a b c d	7. a b c d	13. a b c d	19. a b c d	25. a b c d	31. a b c d
2. a b c d	8. a b c d	14. a b c d	20. a b c d	26. a b c d	32. a b c d
3. a b c d	9. a b c d	15. a b c d	21. a b c d	27. a b c d	33. a b
4. a b c d	10. a b c d	16. a b c d	22. a b c d	28. a b c d	
5. a b c d	11. a b c d	17. a b c d	23. a b c d	29. a b c d e	
6. a b c d	12. a b c d	18. a b c d	24. a b c d	30. a b c d	

COURSE EVALUATION: Please evaluate the effectiveness of this activity by circling your choice on a scale of 1 to 5, with 1 being the lowest and 5 the highest.

1. Did the material provide an adequate overview of evidence-based guidelines to improve the identification of high-risk patients requiring prophylaxis for DVT and PE? **1 2 3 4 5**
2. How well did the material explain acquired and genetic risk factors for VTE? **1 2 3 4 5**

3. How well did the material discuss and explain the use of anticoagulants, warfarin, thrombolytic therapy, and mechanical interventions in managing DVT and PE? **1 2 3 4 5**

4. How do you rate the overall quality of the activity? **1 2 3 4 5**

5. How do you rate the educational content of the activity? **1 2 3 4 5**

6. Was the presented information fair, objective, balanced, and free of bias in the discussion of any commercial product or service?
   ___Yes ___No If not, please describe: ____
   ____
   ____

7. Suggested topics for future activities:
   ____
   ____

8. Suggested authors for future activities:
   ____
   ____
   ____

9. After participation in this activity, have you decided to change one or more aspects in the treatment of your patients?
   ___Yes ___No If yes, what changes will you make:______________________________
   ____
   ____

   If not, why?
   ____
   ____

10. Would you be willing to participate in postactivity follow-up surveys? ___Yes ___No

11. Would you be willing to participate in a phone, e-mail, or in-person discussion exploring ways to improve our CME activities? ___Yes ___No

The EOCME thanks you for participation in this CME activity. All information provided improves the scope and purpose of our programs and your patient's care.

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