

## *CME Test Questions*

# TREATMENT OF HYPERTENSION AND CARDIOVASCULAR DISEASE

1. Which of the following statements regarding the body's circadian rhythms is false?
  - a. It exhibits a diurnal pattern.
  - b. It plays an important role in regulating the sleep/wake cycle.
  - c. It is a phenomenon unique to humans.
  - d. It plays a role in mediating the "morning surge" in blood pressure.
  
2. Which of the following statements regarding chronotherapies is true?
  - a. Most forms of sustained-release antihypertensive agents can be used as chronotherapies if dosed after 9 PM.
  - b. Several multicenter studies have shown that they can reduce the risk of stroke to a comparable degree to traditional short-acting agents.
  - c. These agents have shown the ability to reduce absolute blood pressure levels and to slow the rate of increase during the "morning surge."
  - d. Most formulations have shown dose-dependent reductions in blood pressure.
  
3. The rate of SBP increase during the morning surge is approximately \_\_\_\_\_.
  - a. 10 mm Hg/h
  - b. 3 mm Hg/h
  - c. 1 mm Hg/h
  - d. 8 mm Hg/h
  
4. Pathophysiologic changes known to increase the risk of cardiovascular events in the morning include all of the following except \_\_\_\_\_.
  - a. increased vessel tone
  - b. increased cardiac stroke work
  - c. hyperproduction of anticoagulant proteins
  - d. a rise in catecholamine levels
  
5. Which of the following statements regarding the Controlling Hypertension in the Morning with a Chrono Medication study is true?
  - a. No antihypertensive benefit was seen in patients previously treated with  $\alpha$ -blockers.
  - b. Therapeutic response was defined as the change in mean arterial pressure compared with baseline.
  - c. Titrating the dose upward from 200 to 400 mg/d nearly doubled the percentage of patients who were considered responders.
  - d. A higher percentage of participants achieved target SBP levels than DBP levels.
  
6. Hypertension is a risk factor for stroke.
  - a. True
  - b. False
  
7. According to findings of the INVEST trial, which drug treatment regimen can be substituted for a  $\beta$ -blocker/diuretic under some circumstances?
  - a. CCB/diuretic
  - b. Diuretic/ACE inhibitor
  - c. CCB/ACE inhibitor
  - d.  $\beta$ -blocker/ACE inhibitor
  
8. The LIFE study found a distinct advantage in terms of cardiovascular events over 4 years with which medication?
  - a. Losartan
  - b. Atenolol
  - c. Verapamil
  - d. Trandolapril
  
9. JNC-7 states that all classes of agents, with the exception of \_\_\_\_\_, are effective for reducing LVH.
  - a.  $\beta$ -blockers
  - b. CCBs
  - c. direct vasodilators
  - d. ACE inhibitors
  
10. Which antihypertensive agents have been developed to deliver the most effective dose of medication during the period of the morning surge?
  - a. Verapamil
  - b. Propranolol
  - c. Diltiazem
  - d. All of the above

**11. As reported in the ALLHAT study, possible reasons for a reduced response to blockers of the RAS in blacks include all of the following except \_\_\_\_\_.**

- underrepresentation of blacks in studies of RAS blockers
- cytochrome P-450 interactions between RAS blockers and insulin-sensitizing agents, resulting in lower peak plasma levels of RAS blockers
- a selection bias against the use of multiple blood pressure medications in addition to RAS blockers
- genetic differences between blacks and other ethnic groups

**12. Which of the following classes of agents are associated with the greatest degree of blood pressure control in blacks?**

- $\beta$ -blockers and  $\alpha$ -blockers
- $\beta$ -blockers and ACE inhibitors
- CCBs and diuretics
- ACE inhibitors and ARBs

**13. Low-dose combination therapies should be initiated in black patients with blood pressure  $\geq 155/100$  mm Hg, using any of the following combinations except \_\_\_\_\_.**

- $\beta$ -blockers/diuretics
- CCBs/ACE inhibitors
- ARBs/diuretics
- ACE inhibitors/ $\beta$ -blockers

**14. In the ALLHAT study, which groups were significantly less likely to receive combination antihypertensive therapies?**

- Blacks and men
- Blacks and smokers
- Smokers and those with impaired renal function
- Men and those with left ventricular hypertrophy

**15. Which of the following statements regarding the management of blood pressure in blacks with diabetes is *false*?**

- Target systolic blood pressure should be  $<130$  mm Hg.
- All combination therapies should include a RAS-blocking agent.
- If patients are not adequately managed on an ACE inhibitor and CCB, a low dose of a second ACE inhibitor should be added.

**d.** Monotherapy can be considered in patients with blood pressure  $<145/90$  mm Hg.

**16. Which of the following statements are *true*?**

- ESRD affects 11% of the US population.
- CKD affects 0.2% of the US population.
- Both
- Neither

**17. Which of the following statements are true regarding diabetic renal disease?**

- Typically not accompanied by hypertension
- Associated with decreased responses to vasoconstrictor hormones
- Treatment with a DHP CCB slows the progression of established renal disease
- ACE inhibitors have a renoprotective effect

**18. The degree of albuminuria is directly associated with MI and stroke.**

- True
- False

**19. The progression of microalbuminuria to macroalbuminuria is not predictive of the progression of renal disease.**

- True
- False

**20. The AASK involved which of the following study agents?**

- Ramipril
- Amlodipine
- Metoprolol
- All of the above

**21. In the AASK trial, ramipril demonstrated a renoprotective effect. What was the effect of amlodipine?**

- Decreased proteinuria
- Increased proteinuria when proteinuria was present
- Significantly increased blood pressure
- Had no substantial effect

**22. Amlodipine and nifedipine are effective in reducing systemic hypertension but fail to reduce \_\_\_\_\_.**

- progression of renal disease
- glomerular capillary pressure

- c. cardiovascular morbidity and mortality
  - d. proteinuria
- 23. DHP CCBs do not typically decrease efferent arteriolar resistance.**
- a. True
  - b. False
- 24. ALLHAT compared which antihypertensive agents with respect to their ability to reduce the risk of CHD or cardiovascular events in high-risk hypertensive patients?**
- a. DHP CCB vs ACE inhibitor
  - b. ACE inhibitor vs CCB
  - c. Thiazide-like diuretic vs ACE inhibitor
  - d. DHP CCB vs thiazide-like diuretic
- 25. What was the largest trial of antihypertensives ever undertaken?**
- a. HOPE
  - b. ALLHAT
  - c. Nordic Diltiazem Study
  - d. CONVINCE
- 26. At 4.9 years' follow-up, there were \_\_\_\_\_ differences between the treatment groups with respect to the final end point.**
- a. many
  - b. few
  - c. some insignificant
  - d. no significant
- 27. The likelihood of developing type 2 diabetes was found to be significantly higher in patients treated with chlorthalidone than in those treated with amlodipine.**
- a. True
  - b. False
- 28. Analysis of cardiovascular outcomes in hypertensive patients with renal impairment demonstrated that \_\_\_\_\_ was slightly better than \_\_\_\_\_ in patients with modest reductions in glomerular filtration rate.**
- a. lisinopril/chlorthalidone
  - b. chlorthalidone/diltiazem
  - c. amlodipine/diltiazem
  - d. amlodipine/chlorthalidone
- 29. In which patient group are ACE inhibitors, CCBs,  $\beta$ -blockers, ARBs, and thiazide diuretics preferred?**
- a. Patients with hypertension and stable angina
  - b. Diabetic patients with stable angina
  - c. Diabetic patients with hypertension
  - d. Patients with unstable angina

# *CME Test Answer Sheet and Evaluation Form for* **TREATMENT OF HYPERTENSION AND CARDIOVASCULAR DISEASE**

Volume 6, Number 4

**Release Date of Activity: December 30, 2004**  
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### CME TEST

*(Please circle correct answers)*

- |            |             |             |             |             |
|------------|-------------|-------------|-------------|-------------|
| 1. a b c d | 7. a b c d  | 13. a b c d | 19. a b     | 25. 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 |
| 3. a b c d | 9. a b c d  | 15. a b c d | 21. a b c d | 27. 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 |
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| 6. a b     | 12. a b c d | 18. a b     | 24. a b c d |             |

**COURSE EVALUATION:** *Please rate the overall course on a scale of 1 to 5, with 1 the lowest and 5 the highest.*

1. Did the material provide an adequate overview of hypertension and cardiovascular disease? 1 2 3 4 5
2. How well did the material discuss identifying high-risk patients? 1 2 3 4 5
3. How well did the material explain delaying or preventing the progression of hypertension? 1 2 3 4 5
4. Did the material give recommendations for pharmacologic and nonpharmacologic intervention strategies? 1 2 3 4 5
5. How well did the material explain hypertension risk factors? 1 2 3 4 5

6. Were the articles appropriate to the topic of this issue of *Clinical Cornerstone*®?

Yes  No  Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



7. Did you find the information presented to be objective, fair, balanced, and free of commercial bias?  
Yes  No  Comments: \_\_\_\_\_  
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\_\_\_\_\_
8. Give at least one example of how the content of this publication will be of use in your clinical practice.  
\_\_\_\_\_  
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11. Do you have any recommendations to improve this publication?  
\_\_\_\_\_  
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\_\_\_\_\_
12. What topics would you suggest for future issues?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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