

PharmaCE™

a continuing education program for *JPT* readers

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September/October CE Questions

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ACPE Universal Program Number 407-000-06-055-H01

Expires: 10/31/09

CHRONIC STABLE ANGINA THERAPY

(see page 271)

Goal

To review the ACC/AHA guidelines, with a focus on medication management to prevent cardiovascular events in patients with chronic stable angina, and provide an overview of recent clinical trials assessing the utility of ACE inhibitors and/or CCBs in preventing cardiovascular events in patients with coronary artery disease and/or chronic stable angina.

Objectives

After reviewing this article, the reader should be able to:

1. describe chronic stable angina and coronary artery disease;
2. discuss recommendations from the ACC/AHA guidelines for the management of patients with chronic stable angina;
3. distinguish between the mechanisms of action of ACE inhibitors and CCBs in the prevention of cardiovascular events in patients with coronary artery disease;
4. interpret clinically and statistically significant findings from ACE inhibitor and CCB studies discussed throughout the review;
5. differentiate between the baseline demographics of patients with coronary artery disease in each of the cardiovascular event reduction trials;
6. given a case study of a patient with chronic stable angina, identify the proper drug or drugs and dosages for patients to prevent chest pain symptoms;
7. given a case study of a patient with chronic stable angina, identify the proper drug or drugs and dosages for patients to prevent cardiovascular events.

Test Questions

1. Which of the following are possible beneficial mechanisms of ACE inhibitors in preventing cardiovascular events?
 - (a) reduced angiotensin II levels
 - (b) increased nitric oxide production

- (c) decreased bradykinin production
- (d) Both a and b are correct.
- (e) All of the above are correct.

2. Which ACE inhibitor study enrolled patients who were optimally managed with lipid-lowering therapy?
 - (a) HOPE
 - (b) EUROPA
 - (c) PEACE
 - (d) QUIET
 - (e) IMAGINE
3. Which ACE inhibitor study included the largest percentage of patients with diabetes mellitus?
 - (a) HOPE
 - (b) EUROPA
 - (c) PEACE
 - (d) QUIET
 - (e) IMAGINE
4. Which of the following are possible beneficial mechanisms of nondihydropyridine CCBs in preventing cardiovascular events in patients with chronic stable angina?
 - (a) negative chronotropic effects
 - (b) decreased myocardial oxygen supply
 - (c) increased cardiac workload
 - (d) Both a and c are correct.
 - (e) All of the above are correct.
5. In the CAMELOT study, inclusion of patients with which of the following comorbidities could have skewed the true benefit of amlodipine in patients with stable coronary artery disease?
 - (a) diabetes mellitus
 - (b) vasospastic angina
 - (c) heart failure
 - (d) hypertension
 - (e) dyslipidemia
6. Which of the following studies enrolled a true chronic stable angina population that was optimally managed with β -blockers at baseline?
 - (a) HOPE
 - (b) EUROPA
 - (c) ACTION
 - (d) INVEST
 - (e) CAMELOT
7. Which of the following statements is *true*?
 - (a) Patients with chronic stable angina usually have anginal symptoms with exertion.
 - (b) Transdermal nitroglycerin is essential rescue therapy for vasospastic angina and chronic stable angina.
 - (c) β -Blocker therapy is first-line therapy for vasospastic angina and chronic stable angina.
 - (d) Both a and b are correct.
 - (e) All of the above are correct.

Questions 8–10 refer to the following case:

A 67-year-old man has a history of hypertension, chronic stable angina, and type 2 diabetes. His current angina medications are diltiazem 180 mg daily, vitamin E 400 IU daily,

Answer sheet appears on page 315.

isosorbide mononitrate 60 mg twice daily, and sublingual nitroglycerin as needed. His BP is 124/74 mm Hg and heart rate is 70 beats/min. His TC is 165 mg/dL, HDL-C is 45 mg/dL, LDL-C is 90 mg/dL, and triglycerides are 150 mg/dL. He has not had any episodes of chest pain over the past 3 months.

8. Which of the following is a goal of therapy in treating this patient's chronic stable angina?
- (a) decrease myocardial oxygen supply
 - (b) increase myocardial oxygen demand
 - (c) decrease risk of sudden death
 - (d) increase cardiac contractility
 - (e) maintain a heart rate between 70 and 90 beats/min
9. Since his chronic angina is stable, which of the following changes to this patient's regimen is *most* appropriate to prevent "hard" cardiovascular events (cardiovascular death, nonfatal MI, nonfatal stroke)?
- (a) add ramipril
 - (b) add amlodipine
 - (c) add metoprolol
 - (d) increase diltiazem
 - (e) increase isosorbide mononitrate
10. If the patient started having more frequent chest pain symptoms (2–3 times a week) on the current regimen, which of the following changes would be *most* appropriate?
- (a) Add atenolol 50 mg orally daily.
 - (b) Add perindopril 8 mg orally daily.
 - (c) Decrease isosorbide mononitrate to 30 mg orally twice daily.
 - (d) Increase diltiazem to 240 mg orally daily.
 - (e) Add trandolapril 2 mg orally daily.

Questions 11 and 12 refer to the following case:

A 57-year-old woman has a history of hypertension. Her current medications are lisinopril 20 mg daily and aspirin 81 mg daily. Her BP is 138/84 mm Hg and heart rate is 90 beats/min. She presents to the clinic reporting new-onset chest pain intermittently 2 times a week for the past 3 months.

11. Which of the following medication treatment options is the *most* appropriate to decrease the number and incidence of this patient's chest pain symptoms?
- (a) Add metoprolol succinate 50 mg daily.
 - (b) Increase lisinopril to 40 mg daily.

- (c) Add amlodipine 10 mg daily.
- (d) Add sublingual nitroglycerin as needed.
- (e) Add nitroglycerin 0.4 mg daily via transdermal patch.

12. Which of the following is the *most* appropriate way to monitor the effects of this patient's drug therapy?
- (a) Evaluate ischemic symptom duration and frequency.
 - (b) Estimate coronary artery function with an echocardiogram.
 - (c) Exercise tolerance testing while the patient is taking medication.
 - (d) Both a and b are correct.
 - (e) All of the above are correct.

Questions 13 and 14 refer to the following case:

A 46-year-old man has a history of hypertension and chronic stable angina. His current medications are atenolol 50 mg daily, atorvastatin 10 mg daily, and aspirin 81 mg daily. His BP is 140/88 mm Hg and heart rate is 60 beats/min. He presents to the clinic reporting chest pain that occurs 1–2 times a week. These symptoms are relieved by sublingual nitroglycerin.

13. What is the *most* appropriate addition or change to this patient's regimen to decrease the frequency of angina symptoms?
- (a) Increase atenolol to 100 mg daily.
 - (b) Increase lisinopril to 40 mg daily.
 - (c) Add verapamil 180 mg daily.
 - (d) Add ranolazine 500 mg twice daily.
 - (e) Add amlodipine 10 mg daily.
14. Three months later, this patient's angina symptoms are controlled and he has not had any ischemic symptoms. Which of the following medications has been shown to be useful in preventing cardiovascular events in patients with stable, mild-to-moderate coronary artery disease?
- (a) lisinopril
 - (b) nifedipine
 - (c) perindopril
 - (d) verapamil
 - (e) trandolapril