Primary and Secondary Prevention of Heart Disease

EDUCATIONAL OBJECTIVES
After completing this activity, the participant should be able to:
1. Discuss primary prevention strategies that may be used in counseling patients at high risk for developing heart disease.
2. Incorporate guidelines for the prevention of heart disease into his or her daily practice.
3. Counsel patients about lifestyle changes that serve as secondary prevention strategies for reducing the progression of heart disease.
4. Instruct patients on the proper use of evidence-based pharmacologic treatment proven to reduce heart disease progression.

CE EXAM RATIONALE
1. Smoking cessation can help reduce the incidence of CHD. Approximately what percentage of U.S. adults wants to stop smoking?
   A. 20%
   B. 30%
   C. 50%
   D. 70%***
   Correct answer: D
   About 70% of adults in the U.S. want to stop smoking, and millions have tried to do so. This willingness presents a counseling opportunity for pharmacists, who are in a pivotal position to help patients determine which smoking-cessation method is best for them. Pharmacists can discuss the benefits of smoking cessation with patients who may be at risk for heart disease and refer interested patients to an appropriate smoking-cessation professional.

2. What is the blood pressure goal for patients with renal insufficiency, according to the AHA 2002 guidelines?
   A. <140/90 mmHg
   B. <130/85 mmHg
   C. <130/80 mmHg***
   D. <120/80 mmHg
   Correct answer: C
   According to the AHA 2002 guidelines, the blood pressure goal is <140/90 mmHg; if renal insufficiency or heart failure is present, the goal is <130/85 mmHg; if diabetes is present, the goal is <130/80 mmHg.

3. Which class of antihypertensives is recommended for most patients with uncomplicated hypertension or contraindications?
   A. Thiazide diuretics***
   B. Calcium channel blockers
   C. ACE inhibitors
D. Beta-blockers

Correct answer: A
Thiazide diuretics are recommended for most patients with uncomplicated hypertension, either alone or in combination with drugs from other classes (Table 4).

4. According to the AHA, which of the following is the goal LDL cholesterol level for a patient with ≤1 risk factor?
   A. <160 mg/dL***
   B. <130 mg/dL
   C. 130-100 mg/dL
   D. <100 mg/dL

Correct answer: A
According to the AHA, the primary goals of lipid management should be LDL <160 mg/dL if one or more risk factors are present; LDL <130 mg/dL if two or more risk factors are present and the 10-year CHD risk is <20%; or LDL <100 mg/dL if two or more risk factors are present and the 10-year CHD risk is ≥20% or the patient has diabetes.

5. In patients with which condition may statins be used as first-line therapy for cholesterol reduction?
   A. Pregnancy
   B. Myositis
   C. Diabetes***
   D. Hepatic disease

Correct answer: C
Statins are the treatment of choice and should be initiated as first-line therapy. Statins should be avoided in pregnancy, hepatic disease, or a history of myositis. Although the addition of statins reduces the risk of nonfatal events, the benefits of high-dose statins must be weighed against the risk of myopathy. Patients with triglyceridemia may be managed with fibrates, nicotinic acid, and omega-3 fatty acids, and those with a low HDL may be prescribed fibrates and nicotinic acid. In mixed dyslipidemias, a statin may be combined with nicotinic acid or a fibrate.

6. In primary prevention, 30 minutes of walking can reduce the incidence of MI by what percentage?
   A. 20%
   B. 30%
   C. 40%
   D. 50%***

Correct answer: D
Obesity has been identified as a major modifiable risk factor for heart disease. The aim of managing obesity should be to achieve a BMI of 18.5 to 24.9 kg/m². Pharmacists should advise obese patients to
reduce body weight through diet and increased physical activity. Thirty minutes of walking daily has been shown to decrease the risk of MI by as much as 50%.

7. The aim of blood glucose control in the primary prevention of CHD should be to achieve which of these?
A. Normal fasting plasma glucose <80 mg/dL and near-normal glycosylated hemoglobin (HbA1c) <5%  
B. Normal fasting plasma glucose <80 mg/dL and near-normal HbA1c <6%  
C. Normal fasting plasma glucose <110 mg/dL and near-normal HbA1c <7%***  
D. Normal fasting plasma glucose <90 mg/dL and near-normal HbA1c <7%  

Correct answer: C
Heart disease is more common in people with diabetes, follows a more aggressive course, and has a worse prognosis. Type 2 diabetes is associated with a greater than twofold increased risk for heart disease. In managing blood glucose, the goal should be to achieve a normal fasting plasma glucose <110 mg/dL and near-normal HbA1c <7%.

8. What reduction in the risk of cardiac events has been shown in patient populations regularly taking aspirin (including men aged >40 years, postmenopausal women, and younger patients with multiple cardiovascular risk factors)?
A. Up to 15%  
B. Up to 28%***  
C. Up to 35%  
D. Up to 50%  

Correct answer: B
The use of aspirin to prevent ischemic events in patients without a history of CHD is controversial. Aspirin use should be targeted to patients at high risk for heart disease and avoided in patients with an increased aspirin tolerance or those at risk for GI bleeding or hemorrhagic stroke. A reduction of up to 28% in the risk of cardiac events has been shown in a number of patient populations taking aspirin regularly, including men older than 40 years, postmenopausal women, and younger patients with multiple CVD risk factors.

9. Which trial showed a reduced rate of heart disease in patients taking antioxidants?
A. CHAOS***  
B. HOPE  
C. GISSI-Prevenzione  
D. HPS  

Correct answer: A
The use of antioxidants for prevention of heart disease has not been established because results of various trials have been controversial. Although the CHAOS found a reduced rate of heart disease in patients taking large doses of antioxidants, the HOPE study, GISSI-Prevention study, and HPS found no benefit from vitamin E supplementation.
10. Which of the following drug classes is used only in the secondary prevention of CHD?
A. Antihyperlipidemics
B. Antihyperglycemics
C. Anticoagulants
D. Antihypertensives

Correct answer: C

There are two aspects to secondary prevention: lifestyle changes and drug treatment. Evidence-based therapy includes antiplatelets and anticoagulants, ACE inhibitors, beta-blockers, and statins.