Test your knowledge

Few areas of medicine have changed as much in the last 20 years as that of ischaemic heart disease. Its high incidence means that GPs encounter the condition frequently and need to know about therapeutic options.

The multiple choice questions in this quiz may have more than one answer.

1. Unstable angina is often caused by platelet aggregation precipitated by plaque disruption. Which of the following inhibit platelet aggregation?
a. paracetamol
b. aspirin
c. ticlopidine
d. clopidogrel
e. warfarin

2. What role do beta blockers have in unstable angina?
a. they are not useful in unstable angina
b. they are useful only if arrhythmia is responsible for unstable angina
c. they are used as first line therapy in unstable angina and myocardial infarction
d. they are useful only for patients who have failed all other forms of treatment for unstable angina, including anticoagulation
e. they are useful in hypertension associated with unstable angina only

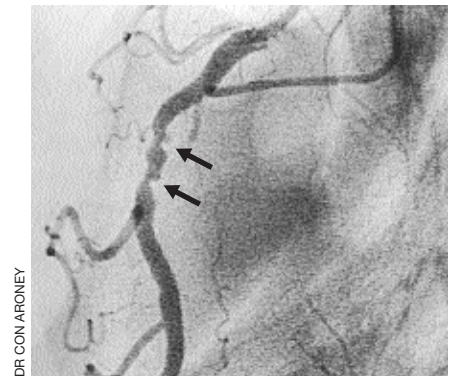
3. Nitrates are used in stable and unstable angina. How do they work?
a. by arterial vasodilatation
b. by reducing preload and afterload on the heart
c. by a positive inotropic effect on the heart
d. by analgesic effect only
e. by improving collateral coronary blood flow

4. Which of the following are true of calcium channel blockers?
a. they are first line therapy in unstable angina
b. they are useful when beta blockers are contraindicated
c. they reduce blood pressure in hypertension, but have no other mechanism of action
d. they are useful in people who have not had an adequate response to aspirin, nitrates and beta blockers
e. they must never be used with beta blockers

5. Which of the following isolated abnormalities on coronary angiography are suitable for surgical bypass treatment?
a. an 80% obstruction of the left main coronary artery
b. a 50% obstruction of the circumflex artery
c. a 60% obstruction of three coronary arteries in a patient with diabetes mellitus
d. microvascular disease without significant obstruction in the left main coronary artery
e. a 50% luminal obstruction of the right main coronary artery

6. Which of the following are associated with an increased odds ratio for coronary events in the next six months for a patient with unstable angina?
a. elevated erythrocyte sedimentation rate
b. elevated C reactive protein
c. elevated troponin I
d. elevated white cell count
e. elevated haemoglobin

7. A patient has continuing complaints of chest pain in spite of an ECG that remains normal. Cardiac enzymes are not detected. Which of the following may be used to determine if angiography is required?
a. a Holter monitor
b. cardiac enzymes
c. a nuclear medicine thallium scan (to look for evidence of left ventricular dysfunction)
d. dipyridamole sestamibi tomography (to look for a fixed or a reversible perfusion defect)
e. a treadmill stress test



DR CON ARONEY

Figure. Coronary angiography of a patient with refractory unstable angina showing a severe ulcerated plaque in the mid portion of the right coronary artery.

8. Which of the following call for urgent investigation and treatment?
a. angina at rest, but only if associated with ECG abnormalities
b. angina at rest, regardless of whether or not it is associated with ECG changes
c. angina on exertion associated with ST wave elevation
d. angina on minimal exertion that has been stable over the last year in a patient with a past history of Q-wave positive myocardial infarction
e. angina associated with hypotension.

MT

Reference

1. Yeghiazarians Y, Braunstein JB, Askari A, Stone PH. Unstable angina pectoris. N Engl J Med 2000; 342: 101-114.

Answers appear on page 181

Clinical quiz answers

(to questions on page 153)

1. b, c, d

Aspirin, ticlopidine and clopidogrel inhibit platelet aggregation; aspirin is the usual first line therapy. Ticlopidine is associated with a risk of granulocytopaenia (approximately 2%). Patients who require admission to hospital may also receive heparin or a platelet glycoprotein IIb/IIIa receptor antagonist. The drug licensed for this purpose in Australia is abciximab.

2. c

Beta blockers are first line therapy in the treatment of myocardial infarction and unstable angina.

3. a, b, e

Nitrates reduce cardiac oxygen demand by a number of mechanisms including reducing preload and afterload and by arterial vasodilatation. They also improve coronary collateral blood flow, and may also have an effect on platelet aggregation.

4. b, d

Calcium channel blockers cause coronary vasodilatation and reduce blood pressure. They are not recommended as first line therapy and are generally reserved for people who are not able to take beta blockers or people who have had an inadequate response to the combination of aspirin, beta blockers and nitrates.

5. a, c

Coronary artery bypass grafting is indicated for people who have high risk abnormalities on angiography that would not be amenable to stent placement.

6. b, c

For a patient with unstable angina, there is evidence that elevations in C reactive protein and troponin I are associated with an increased risk of coronary events in the following six months.

7. c, d, e

Exercise stress testing, thallium scans and dipyridamole sestamibi testing help to assess the risk that an patient will have an infarct in the near future. These tests can therefore act as a pointer to the need for further intervention.

8. b, c, d, e

Further assessment and treatment are required in a patient with angina at rest (regardless of ECG changes), and a patient with a past history of myocardial infarction who is experiencing angina with minimal exertion. Further assessment and treatment will also be required for a patient who has angina associated with hypotension, and a patient who has ST elevation during pain.