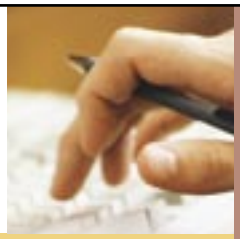
Clinical challenge



Questions for this month's clinical challenge are based on articles in this issue. The style and scope of questions is in keeping with the MCQ of the College Fellowship exam. The quiz is endorsed by the RACGP Quality Assurance and Continuing Professional Development Program and has been allocated 4 CPD points per issue. Answers to this clinical challenge will be published next month, and are available immediately following successful completion online at: www.racgp.org.au/clinicalchallenge. *Steve Trumble*

SINGLE COMPLETION ITEMS

DIRECTIONS Each of the questions or incomplete statements below is followed by five suggested answers or completions. Select the most appropriate statement as your answer.

Case 1 – Gemma Stansfield

Gemma Stansfield, 24 years of age, is a medical student who has been squeezed in for an urgent consultation. She had to leave her final medical exams due to sudden onset of shortness of breath. Feeling better now, she describes having also experienced dizziness, trembling, parasthesias, and palpitations. One of her examiners administered salbutamol via a puffer which only made things worse.

Question 1

All of the following have been associated with panic disorder except:

A. family history
B. personality type
C. appendicitis
D. migraine
E. coronary spasm.

Although this is the first time you have met Gemma, she strikes you as being quite introspective and sensitive to anxiety. She tells you that these type of panic attacks have plagued her throughout her studies, and that she can hear irregularities in her heart beat at night.

Question 2

It is most likely that Gemma's anxiety:

A. is due to a negative feedback loop involving physical sensations
B. leads her to be hypervigilant of her bodily functions
C. heralds the imminent occurrence of a medical emergency
D. is caused by an endocrine disorder
E. will prevent her practising as a doctor.

Question 3

Gemma fits the criteria for panic disorder. She is keen to get these problems under control. In discussing her treatment options, you explain to her that cognitive behavioural therapy for panic disorder:

A. is less effective than medications at controlling symptoms
B. is more effective in the long term when combined with medications
C. is less effective if the patient is also depressed
D. is more effective in research settings than in the 'real world'
E. is likely to continue to be of benefit for at least 2 years.

Question 4

Which of the following is most appropriate for Gemma to use before she presents for her supplementary final exam?

A. propranolol 40 mg
B. diazepam 2 mg
C. metoprolol 100 mg
D. fluoxetine 40 mg
E. cognitive restructuring.

Case 2 – Sai-Kit Yung

Your next patient, Sai-Kit Yung, has been taken into the treatment room by the practice nurse after he arrived at the practice short of breath. He is the 73 year old father of a long term patient of yours; he arrived from Hong Kong this morning for a 6 week visit. Through his son (and muffled by the oxygen mask), Mr Yung describes a recent worsening of his chronic cough and his exertional breathlessness.

Question 1

Diagnoses to consider in assessing Mr Yung include:

A. an acute exacerbation of chronic obstructive pulmonary disease (COPD)
B. congestive cardiac failure
C. pulmonary embolism
D. acute asthma
E. all of the above.

Question 2

Further questioning reveals that Mr Yung was diagnosed with COPD by his doctor in Hong Kong in 1993, at which time he stopped smoking. Since then, he has had frequent infective exacerbations. The only accurate method for measuring airflow obstruction in patients with COPD is:

A. peak expiratory flow measurement
B. spirometry
C. chest radiograph
D. ventilation perfusion scanning
E. bronchoscopy.

Question 3

The most likely risk factor to be underlying Mr Yung's symptoms is:

A. cigarette smoking

B. occupational exposure to asbestos
C. exposure to 'avian influenza' in Hong Kong
D. recent prolonged air travel
E. environmental pollutants.

Question 4

You assess Mr Yung as suffering from moderate COPD. He is using a salbutamol puffer frequently but his symptoms return after 4 hours. He is taking no other medication. The best next treatment to prescribe is:

A. theophylline
B. a leukotriene modifier
C. domiciliary oxygen
D. salmeterol
E. oral corticosteroids.

Case 3 – Levi Tinker

There's little time for lunch as an urgent home visit has been scheduled. Mr Levi Tinker has just been discharged from the local hospital where he had been recovering from a fractured neck of femur. At 79 years of age, he's finding it difficult to get around. Mr Tinker's daughter, Ruth, is extremely worried that he has become acutely short of breath this morning and is complaining of sharp chest pain and blood stained sputum. You suspect a pulmonary embolus.

Question 1

On examination, you may find that Mr Tinker has:

A. bradycardia
B. diminished breath sounds
C. elevated jugular venous pressure
D. low grade fever
E. pitting oedema.

Question 2

You have recently invested in a portable electrocardiograph/defibrillator. The classic signs of pulmonary embolus that Mr Tinker's electrocardiogram might show are:

A. S1Q3T3
B. S2Q3T2
C. S1Q1T2
D. S2Q1T3
E. SPQR.

Mr Tinker is very anxious about what is going on and is prepared to go back to hospital by ambulance for further investigation. The hospital has just invested in spiral CT pulmonary angiography equipment which clearly confirms the diagnosis of a small pulmonary embolus in the left lung. Mr Tinker shows no signs of right heart strain or failure. He is immediately anticoagulated and warfarin is commenced the next day.

Question 3

What is the standard duration of warfarin anticoagulation for a first episode of pulmonary embolism without an identifiable reversible risk factor?

A. 1 month
B. 3 months
C. 6 months
D. 12 months
E. indefinitely.

Question 4

If you ordered a D-dimer test on Mr Tinker, it would be of most diagnostic benefit if it were:

A. twice normal
B. combined with a chest X-ray
C. performed before the administration of heparin
D. repeated in 48 hours
E. negative.

Case 4 – Lucinda Syson

Lucinda, 38 years of age, is climbing out of her car as you arrive back at the practice. You haven't seen her since she brought her son for an immunisation a year ago. She looks anxious and restless; even in the car park you can see that she is having trouble breathing.

Inside, with oxygen running at 8 L/min, she explains that her asthma has flared up since her children brought a rabbit home from school for the holidays. Normally, she only needs her salbutamol puffer occasionally during the spring. Today, she has generalised wheeze, a tachycardia, and has trouble speaking a full sentence.

Question 1

The most appropriate treatment to administer next is:

A. intravenous aminophylline
B. intramuscular adrenalin
C. intravenous hydrocortisone
D. oral prednisolone
E. nebulised salbutamol.

Question 2

If Lucinda had more severe, life threatening asthma she would definitely have:

A. pulse oximetry <92%
B. loud generalised wheezing
C. pulsus paradoxus
D. tachycardia
E. peak expiratory flow 75% predicted.

As Lucinda responds to your treatment, you reflect on the 21st century management of asthma in Australia.

Question 3

Which of the following is true?

A. asthma mortality is higher in urban areas
B. the death rate from asthma continues to climb, despite improved management
C. spacers can play a role in the acute management of asthma in children
D. compared to the elderly, children are at greater risk of dying from asthma
E. oxygen should be used with caution in adults with severe asthma.

Question 4

Failure of a patient to respond to appropriate asthma treatment could indicate:

A. the presence of an inhaled foreign body
B. an unsuspected underlying allergy
C. congestive cardiac failure
D. an exacerbation of COPD
E. all of the above.

ANSWERS TO JUNE CLINICAL CHALLENGE

Case 1 – Susan Jones

1. Answer D

Overweight or obesity is not a contraindication to exercise per se. However, cardiovascular risk factors tend to cluster and it would be wise to thoroughly assess an obese patient for cardiovascular risks before commencing exercise.

2. Answer B

National physical activity guidelines for Australian adults recommends 30 minutes of moderate intensity exercise on most (5) days of the week. The 30 minutes can be accumulated in bouts of 10 minutes. Exercise producing an energy expenditure of about 800 kcal per week for a 70 kg person is recommended for cardiovascular health.

3. Answer C

A single aerobic exercise session results in an average BP fall of 5–7 mmHg immediately after the session. Regular aerobic exercise of 5 x 30 minute moderate intensity sessions per week results in an average BP drop of about 7 mmHg. Resistance training has a favourable chronic effect on resting BP but less than aerobic exercise.

4. Answer B

During moderate intensity exercise the heart rate is 55–69% of maximum, breathing rate is slightly increased and the individual may sweat lightly. Maximum heart rate is estimated by subtracting age from 220.

Case 2 – Graeme Nunn

1. Answer D

The 5As approach involves:

- Ask – identify all smokers in the practice
- Assess – interest and confidence in quitting and level of nicotine dependence
- Advise – nonjudgmental advice to quit
- Assist – with Quit information and pharmacotherapy
- Arrange – referral to Quit and follow up.

2. Answer A

Premature advice and lecturing Graeme are unlikely to be helpful and may increase Graeme's resistance. It is preferable to explore his interest and confidence in quitting.

3. Answer A

It is important to let the patient decide how much of a problem they have. If Graeme's motivation to quit is low, explore what would need to happen to increase his motivation. Confidence in the ability to quit is less relevant if he is still not interested in attempting, but would be the next thing to explore.

4. Answer E

Even brief strategies in GP consultations can be effective with quit rates of over 10%. Spending more time may increase the impact but the effect is not linear. Effectiveness is increased by using a whole practice approach, focussing on smokers who express an interest in quitting, offering pharmacotherapy and arranging follow up appointments.

Case 3 – Betty Simpson

1. Answer B

Treatment targets for diabetic patients are HbA1c <7.0, BP <130/85 mmHg (or <125/75 mmHg if they have proteinuria), total cholesterol <4 mmol/L, triglycerides <2 mmol/L, HDL >1.0 mmol/L and LDL <2.5 mmol/L.

2. Answer C

Betty has tried hard to change her lifestyle and needs to be encouraged to continue. Metformin is the best first choice hypoglycaemic agent in overweight diabetics. Although glycaemic control is important, it is equally important to make sure that other risk factors are actively managed.

3. Answer D

In general, women are of lower cardiovascular risk than men, but in women who are of high risk need to be treated as aggressively as men of equal risk. Diabetes neutralises the advantage of women over men for future CHD events. The NHMRC guidelines recommend patients over 50 years with diabetes and other risk factors have a resting ECG every 2 years.

4. Answer B

ACE inhibitors are the preferred antihypertensive agents in diabetics. They have been shown to decrease CHD, renal and eye complications as well as all cause mortality. Statins also reduce CHD risk in diabetic patients, even if they have normal cholesterol. Aspirin is recommended for primary and secondary prevention of cardiovascular events in diabetics.

Case 4 – Harry Beale

1. Answer B

For patients with diabetes, statin therapy is subsidised by the PBS if total cholesterol is >6.5 mmol/L (or >5.5 with an HDL <1.0). Patients with existing CHD qualify if their total cholesterol is >4.0 mmol/L. With a value of 6.2 mmol/L, Harry would not have qualified before his AMI, but would now!

2. Answer A

Antiplatelet therapy, beta blockers, ACE inhibitors, and statins all have level 1 evidence that they reduce vascular events and mortality in patients post-AMI. Treatment is lifelong. Clopidogrel is used in patients intolerant of aspirin or for 12 months following a stent. Warfarin is used in patients with atrial fibrillation.

3. Answer E

Cardiac rehabilitation programs assist patients to return to an active and satisfying life and help prevent a recurrence of cardiac events. Depression increases the risk of CHD. Cognitive behaviour therapy and SSRI medication are both effective treatments.

4. Answer A

In diabetic, hypertensive patients, who have proteinuria over 1g/day, BP targets are lower at 125/75 and more aggressive antihypertensive treatment is required. Treatment with an ACE inhibitor is appropriate (if tolerated) and the dose may need to be increased to achieve target BP. Many hypertensive patients require 2 or 3 agents to achieve effective control.