ABCDE 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 multiple choice questions of the RACGP Fellowship exam. The quiz is endorsed by the RACGP Quality Improvement and Continuing Professional Development Program and has been allocated 4 Category 2 points per issue. Answers to this clinical challenge are available immediately following successful completion online at www.gplearning.com.au. Clinical challenge quizzes may be completed at any time throughout the 2011–13 triennium, therefore the previous months answers are not published.

Sarah Metcalfe

Single completion items

CPD

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

Jerry Berger

Jerry, 68 years of age, has mild COPD. He presents at the clinic during your morning session with rapid onset shortness of breath and difficulty swallowing. You immediately assess him and note he is wheezing, appears puffy around the eyes and has a hoarse voice. He denies any chest pain. He says he was completely well half an hour ago, apart from a slight headache for which he had taken some ibuprofen.

Question 1

Jerry is afebrile, heart rate 110 bpm, BP 115/65 mmHg. You recall he is often hypertensive on routine review. What is your immediate next step in management:

A. send him for a chest X-ray to rule out pneumonia as a cause for his shortness of breath
B. administer salbutamol 5 mg inhaled via nebuliser
C. apply oxygen
D. administer adrenaline 0.5 mg IM
E. prescribe doxycycline and prednisolone to treat his infective exacerbation of COPD.

Question 2

Three minutes later, Jerry remains hypotensive and short of breath. You have gained IV access and your practice nurse has already called an ambulance. The next most appropriate management step is:

A. give adrenaline 0.5 mg IM
B. give adrenaline 0.5 mg IV bolus
C. give hydrocortisone 100 mg IV
D. intubate Jerry
E. sit Jerry up to help with his breathing.

Question 3

Jerry responds well your treatment and the ambulance arrives to take him to hospital. When you next see him he is with his daughter Sarah, aged 43 years. Sarah hands you a hospital discharge summary about a recent admission she had due to anaphylactic shock secondary to penicillin ingestion. Long-term management for Sarah should include all of the following EXCEPT:

A. clear documentation of penicillin allergy in Sarah's medical record
B. development of an emergency action plan for anaphylaxis
C. discussion of a MedicAlert bracelet
D. prescription of an adrenaline autoinjector
E. referral to an allergy specialist.

Question 4

What are the most common triggers responsible for anaphylactic deaths in Australia:

A. exercise combined with a food trigger
B. food allergies
C. insect stings
D. medications
E. peanuts.

Case 2

Beryl Fisher

Beryl, 76 years of age, presents complaining of 4 days of an itchy, widespread skin rash that 'keeps moving'. History reveals she commenced perindopril for uncontrolled hypertension 2 weeks ago.

Question 5

The most likely underlying immunological mechanism for Beryl's rash is:

A. IgE mediated immediate hypersensitivity
B. cell mediated – cytotoxic lymphocytes
C. immune complex
D. antibody dependent cytotoxicity
E. cell mediated – eosinophils and IL-5.

Question 6

Factors to consider when determining whether or not Beryl's perindopril is the cause of her problem and should be stopped include all EXCEPT:

A. blood testing for serum tryptase
B. cofactors such as illness or other medications
C. severity of her reaction
D. skin biopsy
E. timing of onset of reaction.

Question 7

While you are updating her history, Beryl adds that she is also allergic to codeine because she 'went crazy and saw strange things' when she had it. This reaction is better described as:

A. an interaction
B. intolerance
C. a pseudo-allergy
D. a side-effect
E. toxicity.

Question 8

You review Beryl after her urticaria has resolved, post cessation of perindopril, and consider which other agent would be appropriate to treat her hypertension. Which of the following is most accurate:

A. amlodipine would be an appropriate option
B. irbesartan should be considered absolutely contraindicated in this patient
C. lisinopril would be relatively contraindicated
D. ramipril could be used with caution
E. her hypertension should be controlled with lifestyle change alone.

Case 3
Emiliana Suarez

Emiliana, 23 years of age, has bipolar affective disorder, which is well controlled on lithium. She attends for a routine review and you take a blood sample to check her serum levels.

Question 9

Lithium has all of the following characteristics that make therapeutic drug monitoring helpful EXCEPT:

A. a narrow therapeutic index
B. a suitable laboratory assay
C. minimal pharmacokinetic variability
D. no appropriate direct measure of desired therapeutic effect
E. serious consequences if there is therapeutic failure.

Question 10

Emiliana has not yet taken her lithium this morning. This is important because:

A. pre-dose trough levels represent the least variable point in the dosing interval
B. lithium has a particularly short half-life
C. pre-dose trough levels have often been used to establish therapeutic ranges
D. lithium takes 3–5 days to achieve steady state
E. both A and C are correct.

Question 11

Which of the following clinical scenarios would prompt you to check a patient's lithium levels:

A. acute pulmonary oedema secondary to cardiac failure
B. commencement of an ACEI for hypertension
C. routinely at least 6 monthly
D. 3 days of diarrhoea and profuse vomiting
E. all of the above.

Question 12

Emiliana's result is returned at 0.5 mmol/L (therapeutic range 0.6 –1.2 mmol/L). What would your next management step be:

A. increase her dose and repeat the test in 1 month
B. make no change to her dose considering she is clinically stable
C. cease her lithium because it obviously isn't doing anything to help her
D. commence sodium valproate as an alternative mood stabiliser
E. repeat the blood test the next day in case it is an erroneous result.

Case 4
Alex Gibbs

Alex, 78 years of age, is a new patient to your practice. He has well-controlled type 2 diabetes, weight of 90 kg and BP of 150/86 mmHg. His current medications include metformin/glibenclamide combination tablet (500/5 mg) BD, atorvastatin 40 mg nocte, verapamil 180 mg SR mane, paracetamol 1 g qid and aspirin 100 mg mane. Baseline bloods completed 2 days ago reveal a creatinine of 138 µmol/L and an automated laboratory calculated eGFR of 27 mL/min/1.73 m^2 and potassium 4.3 mmol/L.

Question 13

What is the most appropriate medication adjustment for this patient, assuming a stable level of renal impairment:

A. immediately cease his oral hypoglycaemic combination as metformin should not be used in patients with eGFR <30 mL/min/1.73 m^2
B. cease his verapamil and commence an ACEI
C. cease the combination hypoglycaemic and start metformin 500 mg BD and glipizide 5 mg BD
D. cease his aspirin as NSAIDs should not be used in renal impairment
E. decrease the dose of his statin.

Question 14

What would be the most appropriate choice of additional agent to control his hypertension?

A. atenolol
B. hydrochlorothiazide
C. methyldopa
D. prazosin
E. ramipril.

Question 15

The problem of most concern to Alex is his chronic right knee pain due to osteoarthritis. He feels that paracetamol is not providing sufficient pain relief and produces a box of celecoxib, prescribed for his wife, and asks if he can use it as well. The most appropriate response would be:

A. of course, I will write you a prescription
B. it does give an increased risk of heart disease but if you only use one per day it should be fine
C. yes, these anti-inflammatories don't have such a bad effect on the kidneys as the over-the-counter ones
D. anti-inflammatory medications like this one will very likely worsen your kidney function, but we can discuss other ways to better manage your pain
E. no, they will damage your kidneys, but I can prescribe you some long acting oxycodone to provide pain relief throughout the day.

Question 16

Despite regular water-based exercise and losing 5 kg, Alex's knee pain is still troubling him at review 2 months later. His renal function has remained stable. What would be an appropriate additional analgesic to initiate at this stage:

A. fentanyl 5 µg patch every 3 days
B. oxycodone 10 mg oral BD
C. oxycodone 10 mg controlled release oral BD
D. paracetamol/codeine (500/30 mg) 1–2 BD PRN substituted for a paracetamol 500 mg tablet (maximum 8 tablets paracetamol daily)
E. tramadol 50 mg controlled release oral BD.