



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 are available immediately following successful completion online at www.gplearning.com.au. Check clinical challenge online for this month's completion date.

Kate Molinari

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

Stan Wallace

Stan Wallace, 83 years of age, is a long term patient at your practice. He has chronic heart failure (CHF) and has had two hospital admissions for this in the past 12 months.

Question 1

Stan sees you as a follow up postdischarge.

Which of the following criteria are associated with a poor prognosis for Stan:

- his permanent S3 gallop rhythm
- his recent New York Heart Association (NYHA) Class IV admission
- his serum albumin of 32 g/L
- his daily 180 mg dose of frusemide
- all of the above.

Question 2

Stan says he is still feeling breathless and wants to know what can be done. Choose the correct answer:

- Stan's breathlessness is certainly due to fluid overload
- adding thiazide diuretics to his loop diuretic may overcome any diuretic resistance
- if Stan is not objectively breathless, additional therapy should not be started
- as Stan is mildly hypoxaemic, he will benefit from oxygen
- giving Stan a benzodiazepine for any anxiety is contraindicated.

Question 3

You ask Stan about other symptoms of his CHF. Choose the correct statement:

- Stan's lack of appetite is a concern and warrants further investigation
- constipation is an uncommon symptom as Stan is not taking any opioids
- Stan's nausea may indicate worsening renal function
- as Stan is end stage it is not appropriate to prescribe any exercise
- Stan can be reassured that the aetiology of pain in CHF is well understood.

Question 4

Stan states that he does not want to be resuscitated in the event of a collapse. Choose the correct statement:

- there are concise recommendations for the palliative management of heart failure
- it is important that Stan makes a decision today about advance care planning
- it is appropriate to cease his core CHF drugs today
- it is important to exclude depression in Stan before any decisions are made
- given that Stan does not want to be resuscitated there is no point in continuing with active treatment.

Case 2

Elsie Wilcox

Elsie Wilcox is 72 years of age. You suspect she may have heart failure. She has a background of hypertension and a BMI of 32. She is complaining about feeling constantly tired.

Question 5

Which of the following is correct in regards to investigating Elsie:

- it is important to establish whether Elsie's left ventricular systolic function is normal or reduced
- initial investigations should include chest X-ray, ECG and a transoesophageal echocardiogram
- if Elsie does not have paroxysmal nocturnal dyspnoea and ankle oedema you can rule out CHF
- an elevated brain natriuretic peptide (BNP) will confirm the diagnosis of CHF
- if Elsie does have cardiac failure, an echocardiogram will not change her outcome.

Question 6

You send Elsie for a Doppler echocardiogram and she returns the next week with her report. Which of the following is INCORRECT:

- the statement that this was a 'technically difficult study' may refer to Elsie's obesity
- Elsie's left ventricle is reported as enlarged so her chamber dimensions on M-mode should be greater than the normal range
- Elsie's report will only mention pericardial abnormalities if you asked for these specifically
- Elsie's report mentions reduced left ventricular ejection fraction (LVEF) which is a key clinical finding in heart failure
- the report mentioned regional wall thinning and hypokinesis which are suggestive of underlying coronary artery disease.

Question 7

Elsie's report states she has heart failure with reduced systolic function. Her LVEF is 45%. Choose the correct statement:

- the degree of reduction in systolic function does not provide prognostic information
- ACEIs improve cardiac symptoms and prognosis
- a diagnosis of 'heart failure with normal

- ejection fraction' (HFNEF) would have been better for Elsie as there are treatment guidelines which will improve mortality
- D. an implantable defibrillator is recommended for Elsie
 - E. beta blockers improve cardiac symptoms but do not affect prognosis.

Question 8

You make a long appointment with Elsie to discuss further investigations and treatment options. Choose the correct statement:

- A. 3-D echocardiography would not provide any more information about Elsie's LVEF
- B. Elsie should have an annual echocardiogram
- C. there is no indication to refer Elsie for a coronary angiogram
- D. Elsie should be offered influenza and pneumococcal vaccinations
- E. there is no evidence to suggest an improved outcome for Elsie if she has a CHF management plan in place.

Case 3

Barbara Martins

Barbara Martins, 70 years of age, is a retired teacher. She has recently been discharged from hospital and diagnosed with CHF, Class III.

Question 9

Choose the correct statement:

- A. if Barbara is hypotensive during the day she may benefit from taking her ACEI at night
- B. ACEIs are only indicated in Class I and II in CHF
- C. Barbara's ACEI should have been started at a low dose and needs to be titrated upward over the next 3–4 months
- D. if Barbara's creatinine increases by 10% from baseline, her ACEI should be stopped
- E. renal function and electrolytes should be checked within 2 weeks of commencement and then monthly while on the ACEI.

Question 10

Barbara wants to know more about her medication carvedilol as she doesn't think it is helping her. Which of the following statements is INCORRECT:

- A. beta blockers such as carvedilol are indicated in all patients with CHF
- B. carvedilol has a proven mortality benefit in CHF
- C. you should explain that CHF symptoms can

- initially worsen on carvedilol
- D. it would be appropriate to increase Barbara's dose of carvedilol from 3.125 mg bd to 25 mg bd over a 6 week period
- E. Barbara will need to cease the beta blocker if her heart rate falls below 55 bpm.

Question 11

Barbara wants to know if she could be doing other things apart from taking 'all these tablets'. Choose the correct statement:

- A. Barbara should reduce her sodium intake to <3 g/day
- B. Barbara should reduce her fluid intake to 2 L/day
- C. Barbara should be screened for depression and anxiety
- D. Barbara may benefit from weekly weighing at home, with an action plan
- E. Barbara should engage in regular physical activity and continue with gentle exercise during acute exacerbations.

Question 12

Barbara was told she has 'type 3' heart failure. Her discharge summary states she has NYHA Class III CHF. She has normal renal function. Choose the correct statement:

- A. the NYHA classification is based on clinical examination findings
- B. Class III refers to symptoms at rest
- C. aldosterone antagonists would have a mortality benefit in Barbara
- D. the NYHA classification grades symptoms including pain, nausea and ankle oedema
- E. you need Barbara's echocardiography report in order to comment on this.

Case 4

Winston Harris

You are doing a locum for a friend who works in a rural area. The receptionist calls you to the waiting room urgently. Winston Harris (aged 72 years) is lying on the floor, having trouble breathing. He is known to have CHF.

Question 13

Winston has severe dyspnoea and is tachycardic with poor peripheral perfusion. You suspect he has acute pulmonary oedema (APO). Which of the following should you do initially:

- A. call for help from other staff members
- B. ask someone to telephone 000
- C. commence oxygen

- D. insert a 16 gauge IV cannula
- E. all of the above.

Question 14

You examine Winston while waiting for the ambulance to arrive. Which of the following statements is INCORRECT:

- A. differential diagnoses include exacerbation of chronic obstructive pulmonary disease (COPD) and anaphylaxis
- B. the five vital signs you should look for are: presence of ankle oedema, pulse, blood pressure, respiration and level of consciousness
- C. precipitants for APO can include myocardial infarction and fluid overload
- D. focused examination of Winston will include apex beat, jugular venous pressure and heart sounds
- E. it would be appropriate to get a history from a third party if they are present.

Question 15

You travel in the ambulance with Winston to the local hospital. Choose the correct statement:

- A. Winston should not be given high flow oxygen via a Hudson type mask and reservoir bag if he has a history of COPD
- B. Winston is given glycerol trinitrate sublingually with an aim of maintaining his systolic blood pressure (SBP) above 130 mmHg
- C. if his SBP is 95 mmHg this would be a contraindication to positive airway pressure support
- D. Winston can be given a bolus dose of IV frusemide which can be repeated after 30–60 minutes if he has had no diuresis
- E. giving Winston IV morphine is likely to improve his cardiac output.

Question 16

Which of the following statements is correct in regards to further management of Winston:

- A. performing a 12 lead ECG is a priority
- B. it is not appropriate to have a defibrillator on standby as you do not know his wishes in regard to resuscitation
- C. if he is fluid overloaded and responded to the IV frusemide he may be given oral spironolactone
- D. he should be supported in a sitting position regardless of his level of consciousness
- E. it would be usual to treat him with an adrenaline infusion and a vasopressin antagonist in this rural hospital setting.

Answers to November clinical challenge

Case 1

Justine Fasciani

1. Answer D

There is a 2–3 fold increase in the incidence of fetal congenital malformations in women taking anti-epileptic drugs.

Being on multiple anti-epileptic medications does increase the risk of fetal congenital malformation compared with being on one anti-epileptic medication. Pre-pregnancy and in early pregnancy women with epilepsy require 5 mg/day of folic acid, not 500 µg. There is limited evidence of advantage of changing anti-epileptic medications in established pregnancy. Valproic acid is thought to contribute to congenital malformations more than other anti-epileptic medications.

2. Answer C

The most relevant of the TORCH infections to the fetus in early pregnancy are toxoplasmosis, rubella and cytomegalovirus. Herpes simplex virus is more important later in pregnancy. Listeria is not a TORCH infection.

3. Answer E

20–40% of pregnant women will have first trimester vaginal bleeding. In vitro fertilisation is a risk factor for ectopic pregnancy. Less than 10% of all pregnancies with vaginal bleeding and fetal heart activity on ultrasound at 7–11 weeks gestation will miscarry. Uterine bleeding plus a closed cervix suggest threatened miscarriage, with ultrasound showing an intrauterine pregnancy plus detectable fetal heart. There is currently insufficient evidence to support Rhesus-D immunoglobulin use in threatened miscarriage before 12 weeks gestation.

4. Answer B

On serial HCG readings, fluctuating HCG levels are highly suggestive of ectopic pregnancy, not miscarriage.

Case 2

John Dowd

5. Answer A

In chronic adrenal insufficiency, postural hypotension is a common finding, which can occur due to both glucocorticoid and mineralocorticoid deficiency. Salt cravings are a symptom of aldosterone deficiency. Hyperpigmentation is due to excess ACTH, which is only seen in primary hypoadrenalism. Psychiatric symptoms or signs due to chronic adrenal insufficiency usually regress with steroid therapy.

6. Answer D

In chronic Addison disease, fasting hypoglycaemia does occur due to loss of the gluconeogenic effects of cortisol. Blood tests would likely show hyponatraemia and hyperkalaemia, rather than hypernatraemia and hypokalaemia. Twenty-four hour urinary cortisol levels, not spot urine levels, are an optional investigation following initial blood tests. An ACTH stimulation/synacthen test should not delay starting steroid therapy, depending on the clinical situation.

7. Answer E

Autoimmune adrenalitis is the most common cause of Addison disease in the Western world.

8. Answer B

Peripheral oedema should be monitored on patients treated with mineralocorticoid replacement, to monitor for over-replacement.

Case 3

Margaret Blair

9. Answer E

While TIAs can present with vertigo, sudden onset focal symptoms are more suggestive of a TIA. The range of other potential causes for vertigo is far greater than just TIA.

10. Answer D

Margaret is over 60 (1 point), has BP 130/80 (0 points), had unilateral weakness (2 points), a duration of symptoms less than 1 hour

(1 point) and is not a diabetic (0 points). Therefore her ABCD² score is 4.

11. Answer E

While a liver function test is often done, it is not a routine recommended investigation for a TIA. The other tests are all recommended after a TIA.

12. Answer B

Cholesterol lowering medications are recommended for all patients with a TIA. Limited alcohol and a low sodium, low fat diet are recommended. Blood pressure lowering (eg. with an ACEI) and warfarin if there is atrial fibrillation is recommended. Low glycaemic diets are recommended as part of diabetes management.

Case 4

13. Answer C

Children should be monitored for at least 8 hours. Death is an uncommon outcome. Thirty percent of children will experience symptomatic hypoglycaemia. All children should be given food early during the observation period. Treatment should be instigated if blood sugar levels are below 3.3 mmol/L.

14 Answer D

She should be observed for a minimum of 6 hours. It is 25–50 times more potent than morphine. Mean time to onset of effects is 1 hour. There were no fatalities in a review of overdose in children.

15 Answer E

All of the statements are true.

16 Answer A

Toxic blood levels will be seen earlier due to the liquid nature of the ointment. There are no agreed guidelines regarding the period of observation. Poisoning causes direct stimulation of the medulla. Effects can include metabolic acidosis and hypokalemia. These are late onset side effects.

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