

# CME: Cardiology (146202): self-assessment questionnaire

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**SAQs and answers are ONLINE for RCP fellows and collegiate members.**

## Format

Candidates are asked to choose the best answer from the five possible answers. This best of five format is used in many medical examinations; however, the questions are not intended to be representative of those used in the MRCP(UK) Part 1 or Part 2 Written Examinations.

## The answering process

- 1 Go to <https://cme.rcplondon.ac.uk>
- 2 Log on using your usual RCP username and password
- 3 Select the relevant CME question paper
- 4 Answer all 10 questions by selecting the best answer from the options provided
- 5 Once you have answered all the questions, click on Submit

## Registering your external CPD credits

Carrying out this activity allows you to claim two external CPD credits. These will be automatically transferred to your CPD diary, where you can review the activity and claim your points.

1. A 75-year-old man with a background of type 2 diabetes is referred to a general medical clinic by his GP with worsening breathlessness of unknown cause. On examination, he has mild peripheral oedema, but has normal observations and was otherwise well. He is still managing his normal activities of daily living independently. Blood tests are largely unremarkable; however, an NT-proBNP of 2,300 ng/l (<400) is noted.
 

**Which of the following is the most appropriate next step?**

  - a. Admission to hospital for inpatient investigation and treatment of suspected heart failure.
  - b. Initiation of oral diuretic therapy and discharge from acute medical clinic with GP-led follow-up.
  - c. Referral for a routine outpatient general cardiology appointment.
  - d. Referral for transthoracic echocardiogram and heart failure cardiology review within the next 2 weeks.

- e. Referral for transthoracic echocardiogram and heart failure cardiology review within the next 6 weeks.

2. A 70-year-old man attends the pacing clinic for a routine review of his dual chamber pacemaker, implanted for his previous history of sick sinus syndrome. His background also includes hypertension and type 2 diabetes. His pacemaker interrogation reveals a single 6-hour episode of atrial tachycardia (AT)/atrial fibrillation (AF) since his last check, which appears to reflect genuine AF on electrogram analysis by the physiologist. The patient reports being asymptomatic.

### How will you manage the patient?

- a. Commence a direct oral anticoagulant (DOAC) in view of high thromboembolic risk.
  - b. Commence warfarin in view of high thromboembolic risk.
  - c. Monitor for further progression to sustained AT/AF at future device checks.
  - d. No further action is needed.
  - e. Organise a 24-hour tape to look for longer AF episodes.
3. A 72-year-old woman presents with decompensated heart failure in the context of atrial fibrillation (AF) with rapid ventricular rate. She has a history of long-standing, persistent AF, non-ischaemic dilated cardiomyopathy, cardiac resynchronisation therapy with defibrillator (CRT-D) implantation and a previous AF ablation and redo procedure several years ago. This is her second admission this year with the same presentation. She is currently taking bisoprolol 10 mg OD and digoxin 187.5 mcg OD, as well as prognostic medications for left ventricular (LV) systolic dysfunction and oral anticoagulation.

### How will you manage the patient?

- a. Add amiodarone to her drug regimen.
  - b. Increase bisoprolol to 12.5 mg OD.
  - c. Organise a direct current cardioversion.
  - d. Refer to the arrhythmia clinic for consideration of a repeat AF ablation procedure.
  - e. Refer to the arrhythmia clinic for consideration of AV-node ablation.
4. A 55-year-old man undergoes knee surgery and develops sudden onset breathlessness on day 7 post-operatively. A CT pulmonary angiogram (CTPA) confirms a large proximal pulmonary embolus. After 3 months of

treatment with a direct oral anticoagulant (DOAC), he remains breathless.

**Which is the most appropriate next step?**

- Chronic thromboembolic pulmonary hypertension is the most likely cause, so the patient should be referred to a pulmonary hypertension centre to consider a trial of riociguat followed by surgery if medical therapy fails.
  - Continue treatment with the DOAC for a further 3 months then reassess.
  - Refer to the local cardiology service to undertake diagnostic right heart catheterisation and pulmonary angiography.
  - Request an echocardiogram and a ventilation/perfusion (V/Q) scan and, if there are echocardiographic features suggesting pulmonary hypertension along with mis-matched lung perfusion defects, refer to a specialist pulmonary hypertension centre.
  - Switch to warfarin and reassess after 3 months.
5. **On a 12-lead ECG in a patient with a wide-complex tachycardia, which of the following features is least likely to be associated with a final diagnosis of ventricular tachycardia (VT)?**
- A predominantly negative QRS complex in lead aVR.
  - A slow early deflection in the QRS complex.
  - A ventricular axis of  $-120$  degrees.
  - A ventricular rate of 140 beats per minute.
  - Negative precordial concordance.

6. **A 78-year-old woman is reviewed in a general medical telephone clinic following a recent discharge with pneumonia. She has a background of stage 2 chronic kidney disease, hypertension and heart failure with reduced ejection fraction. She has recently been started on the sodium glucose transporter-2 (SGLT2) inhibitor dapagliflozin by her community heart failure team and had some questions about possible side effects.**

**Which of the following is correct?**

- Fournier's gangrene is common in diabetic patients taking SGLT2 inhibitors.
  - SGLT2 inhibition can cause significant postural hypotension and caution should be exercised in prescribing SGLT2 inhibitors to patients already on other anti-hypertensive drugs.
  - SGLT2 inhibition significantly increases the risk of hyperkalaemia.
  - There is an increased risk of lower limb amputation for diabetic patients taking SGLT2-inhibitors.
  - SGLT2 inhibition is associated with an increased risk of mycotic genital infections.
7. **An 84-year-old man has been diagnosed with an ischaemic LV dysfunction following an acute myocardial infarction last year and is seen in clinic complaining of shortness of breath at rest. He reports that he requires assistance with all activities of daily living. He has been treated with maximum dose carvedilol, eplerenone, dapagliflozin and ramipril for the last year, and his**

**ejection fraction has remained 37% on his recent echocardiogram. His blood pressure is 113/75 mmHg. His ECG reveals atrial fibrillation at a rate of 64 beats per minute, partial left bundle branch block with a QRS duration of 125 ms.**

**Which of the following is the most appropriate next step in his heart failure management?**

- The addition of ivabradine 5 mg BD.
  - Inpatient dual chamber pacemaker and up-titrate beta blockers further.
  - Outpatient CRT-P implantation.
  - Outpatient ICD implantation
  - Stopping ramipril and initiating sacubitril-valsartan at an equivalent dose after 36 hours.
8. **A 50-year-old woman presents acutely with dyspnoea and pedal oedema. She is noted to be in atrial fibrillation with rapid ventricular rate and receives appropriate treatment with rate control medications and diuretics. Once rate controlled and diuresed, she undergoes an echocardiogram which reveals severely impaired left ventricular systolic function (ejection fraction 30%) with global hypokinesia.**

**How will you manage this patient?**

- Commence a direct oral anticoagulant (DOAC) and organise a DC cardioversion in 1 month.
  - Commence a DOAC, organise a DC cardioversion in 1 month and refer to the cardiology or arrhythmia clinic for consideration of AF ablation.
  - Commence both amiodarone and a DOAC and organise a DC cardioversion in 1 month.
  - Organise an inpatient emergency DC cardioversion under transoesophageal echocardiogram (TOE) guidance.
  - Organise an urgent outpatient DC cardioversion within 1–2 weeks.
9. **A 74-year-old woman with a past history of hypertension, atrial fibrillation and breathlessness undergoes echocardiography which suggests an intermediate probability of pulmonary hypertension and preserved biventricular size and systolic function.**

**Which of the following is true?**

- Combination therapy with an endothelin-receptor antagonist and phosphodiesterase type 5 (PDE5) inhibitor is indicated.
- Right heart catheterisation is likely to demonstrate normal pulmonary artery wedge pressures but elevated pulmonary vascular resistance.
- Right heart catheterisation must be undertaken to definitively exclude pulmonary hypertension as the cause for her breathlessness.
- She should be immediately referred to pulmonary hypertension services for further evaluation to minimise the risk of treatment delays impacting on outcomes.
- Treatment should initially focus on the management of her hypertension/left heart disease which is the most likely cause of pulmonary hypertension.

**10. Which one of the following statements is correct with regards to the diagnosis of pulmonary hypertension?**

- a. A mean pulmonary artery pressure at rest of 21 mmHg on cardiac catheterisation rules out a diagnosis of pulmonary hypertension.
- b. A raised pulmonary capillary wedge pressure implies a diagnosis of group 1 pulmonary hypertension.
- c. If estimates of pulmonary pressures are significantly elevated on echocardiography, targeted treatments should be started to minimise the risk of avoidable treatment delays.
- d. Pulmonary hypertension cannot be reliably ruled out by echocardiography alone.
- e. The diagnosis of pulmonary hypertension requires a mean resting pulmonary artery pressure of 25 mmHg or more on cardiac catheterisation.

## CME: Renal medicine SAQ

Answers to the CME SAQ published in *Clinical Medicine* in May 2023.

<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>	<b>Q5</b>	<b>Q6</b>	<b>Q7</b>	<b>Q8</b>	<b>Q9</b>	<b>Q10</b>
(b)	(b)	(b)	(e)	(c)	(e)	(e)	(d)	(a)	(e)