MCQs
Syncope

Question 1

A 60-year-old man was admitted after an episode of transient loss of consciousness. He and his wife described walking down the street and then him 'just going down' with a minimal few seconds warning of 'feeling a bit queer' beforehand. He did not injure himself and recovered quickly. This has happened 6 times in the last 18 months, always while standing or walking.

His past medical history included type 2 diabetes, hypertension and benign prostatic hypertrophy for which he was taking metformin, ramipril, bendroflumethiazide and tamsulosin. He was normally fit and well and held a Group 1 (car) driving licence.

On examination, there was nothing abnormal to find. There was no change in blood pressure from lying to standing. Results of a full blood count, urea and electrolytes, glucose, C-reactive protein and 12-lead ECG were normal.

What is the next best step in management?

A Ambulatory blood pressure monitoring
B Ambulatory ECG
C Capillary glucose measurement when symptomatic
D Carotid sinus massage
E Tilt test

Question 2

A 60-year-old man was admitted after an episode of transient loss of consciousness. He and his wife described walking down the street and then him 'just going down' with a minimal few seconds warning of 'feeling a bit queer' beforehand. He did not injure himself and recovered quickly. This has happened 6 times before in the last 18 months, always while standing or walking.

His past medical history included type 2 diabetes, hypertension and benign prostatic hypertrophy for which he was taking metformin, ramipril, bendroflumethiazide and tamsulosin. He was normally fit and well and held a Group 1 (car) driving licence.

On examination, there was nothing abnormal to find. There was no change in blood pressure from lying to standing. Results of a full blood count, urea and electrolytes, glucose, C-reactive protein and 12-lead ECG were normal.

What advice should be given about driving?

A Likely vasovagal syncope so no restriction
B May not drive until seen by a specialist
C May not drive for 3 months and inform DVLA
D May not drive for 6 months and inform DVLA
E May not drive for 12 months and inform DVLA

Question 3

A 60-year-old businessman was admitted to the Acute Medical Unit following a single syncopal episode, which he had never had before. On the scene paramedics recorded a blood pressure of 80/50 mmHg, heart rate of 100 beats per minute, respiratory rate of 20 per minute, oxygen saturations of 98% on air and a capillary glucose of 6.2 mmol/L.

On examination he complained of feeling tired. His vital signs were back to normal. His lying blood pressure was 140/80 mmHg and his standing blood pressure was 110/85 mmHg. There was nothing else abnormal to find on clinical examination.

Investigations:

Haemoglobin	92 g/L (115–165)
MCV	85 fL (80–96)
white cell count	10.4×10^9/L (4.0–11.0)
platelet count	567×10^9/L (150–400)
serum sodium	138 mmol/L (137–144)
serum potassium	4.5 mmol/L (3.5–4.9)
serum urea	10 mmol/L (2.5–7.0)
serum creatinine	72 μmol/L (60–110)
eGFR	>60 mL/min/1.73 m^2 (>60)
serum glucose	5 mmol/L (3.0–6.0)
serum C-reactive protein	<0.5 mg/L (<0.5)
serum total bilirubin	18 μmol/L (1–22)
serum alanine aminotransferase	110 U/L (5–35)
serum alkaline phosphatase	323 U/L (45–105)
serum gamma glutamyl transferase	401 U/L (<50)
12-lead electrocardiogram	89 beats per minute no other abnormalities

What is the next best investigation?

A Ambulatory ECG
B Carotid sinus massage
C CT scan of the abdomen
D Oesophagogastroduodenoscopy
E Serum ferritin

Question 4

A 20-year old psychology student was admitted following a single syncopal episode. She complained of severe dizziness on standing, which she had had for the last 2 months. She had no past medical history, and no family history of collapses or sudden death.

There was nothing abnormal to find in the cardiovascular or neurological examination. Her blood pressure was 110/60 mmHg and heart rate 85 beats per minute lying down; and 110/65 mmHg and 125 beats per minute within 2 minutes of standing up, associated with symptoms of light-headedness.

A 12-lead ECG was normal. Results of full blood count, urea and electrolytes, glucose, C-reactive protein, thyroid function, pregnancy test and 24 hour urine catecholamine derivatives were all normal.

What is the most likely diagnosis?

A Addison's Disease
B Anxiety
C Autonomic neuropathy
D Postural orthostatic tachycardia syndrome
E Vasovagal syncope

Question 5

A 65-year-old man was admitted following a collapse. He reported at least half a dozen previous collapses with no warning. All were in the standing position – but one had occurred while he was reversing his car in to a parking space. Two others had occurred while crossing the road. An eye-witness account described him 'just going down' with a quick recovery. His wife was extremely concerned about his risk of serious injury due to these collapses.

His past medical history consisted of type 2 diabetes on metformin. He was normally fit and active. Clinical examination was normal. There was no drop in blood pressure after standing, and a 12-lead ECG was normal.

What is the most likely diagnosis?

A Carotid sinus hypersensitivity
B Cardiac arrhythmia
C Drop attacks
D Epilepsy
E Vasovagal syncope

Question 6

A 65-year old man was admitted following a collapse. This had never happened before. Eye-witnesses described him waiting at the bus stop, then looking pale and sweaty and feeling unwell briefly before falling to the ground. An ambulance was called but he made a quick recovery and was back to normal by the time he was seen.

His past medical history comprised hypercholesterolaemia and a previous myocardial infarction, for which he was taking aspirin, bisoprolol, ramipril and atorvastatin. He was normally active and well and did not experience angina.

There was nothing abnormal to find on examination of the cardiovascular system. His vital signs were normal with a blood pressure of 120/80 mmHg which did not fall on standing. A 12-lead ECG was performed (see image).

What is the next best step in management?

A Ambulatory blood pressure monitoring
B Ambulatory ECG
C Carotid sinus massage
D Echocardiogram
E Tilt test

Question 7

A 20-year-old woman was admitted following a collapse. She reported frequent collapses in the past, all from the upright position and preceded by feeling hot and sweaty, her vision closing in, and her heart racing. She was observed by friends to go pale, then fall to the ground before coming round quickly again. Sometimes she was able to abort the collapses by lying down at the onset of symptoms. She worked as a hairdresser in a salon and these collapses were starting to interfere with her work, she was extremely worried that she could lose her job. There was no family history of collapses or sudden cardiac death.

On examination there was nothing abnormal to find. Her blood pressure was 110/70 mmHg with no postural drop. Results of a full blood count, urea and electrolytes, glucose, C-reactive protein and pregnancy test were normal. A 12-lead ECG was normal.

What is the most appropriate drug treatment in this case?

A Bisoprolol
B Fluoxetine
C Midodrine
D No treatment
E Sodium chloride

Question 8

An 80-year-old man was admitted following a collapse. He reported that he stood up quickly to answer the doorbell, then felt dizzy and passed out. His wife saw what happened, she said he 'just went down' and made a quick recovery. He did not injure himself, but she struggled to help him off the floor so an ambulance was called.

His past medical history comprised type 2 diabetes, hypertension, angina and heart failure for which he was taking metformin, aspirin, ramipril, furosemide, isosorbide mononitrate and doxazosin.

Clinical examination revealed no signs of fluid retention and normal heart sounds. His blood pressure was 110/60 mmHg which fell to 90/60 mmHg within 3 minutes of standing, with mild symptoms of light-headedness.

Investigations:

Haemoglobin	120 g/L (115–165)
MCV	85 fL (80–96)
white cell count	10.4×10^9/L (4.0–11.0)
platelet count	347×10^9/L (150–400)
serum sodium	134 mmol/L (137–144)
serum potassium	4.5 mmol/L (3.5–4.9)
serum urea	7.3 mmol/L (2.5–7.0)
serum creatinine	105 µmol/L (60–110)
eGFR	49 mL/min/1.73 m^2 (>60)
serum glucose	9.3 mmol/L (3.0–6.0)
serum C-reactive protein	<0.5 mg/L (<0.5)
12-lead electrocardiogram	89 beats per minute old left bundle branch block

What is the next best step in management?

A Ambulatory blood pressure monitoring
B Ambulatory ECG
C Carotid sinus massage
D Echocardiogram
E Reduction in medication

Question 9

A 34-year-old woman presented following a collapse, which had happened once before in similar circumstances. She had been woken up suddenly from sleep by the phone ringing and her husband described her sitting up, then 'blacking out' with some brief jerking movements of the limbs. She came round quickly after a few minutes. An ambulance was called. By the time of the assessment she was back to normal.

She had no past medical history, no family history of collapses, and was not taking any regular medication. Examination of the cardiovascular and neurological systems was normal. Her vital signs were normal, blood pressure lying down was 135/80 mmHg which did not change on standing. Results of full blood count, urea and electrolytes, glucose, C-reactive protein and a pregnancy test were normal. A 12-lead ECG was performed (see image).

What is the recommended treatment in this case?

A Beta-blockers
B Fluoxetine
C Increased salt and water intake
D Lamotrigine
E No treatment

Question 10

A 50-year-old woman was admitted following a collapse. This had happened twice before. Her husband described how they were out shopping when she started to feel 'drained' and went to sit down, but before she could do so, she collapsed to the floor. She recovered and was back to normal (apart from feeling 'washed out') after a few minutes. Previous collapses had been in similar circumstances – once while in the supermarket, and another while queuing at the Post Office.

Her past medical history included type 2 diabetes, hypertension and asthma for which she was taking metformin, ramipril, bendroflumethiazide and prn ventolin. There was nothing abnormal to find on clinical examination. Her blood pressure was 130/80 mmHg with no change from lying to standing. The results of blood tests and a 12-lead ECG were normal.

What is the next best step in management?

A Ambulatory blood pressure monitoring
B Ambulatory ECG
C Carotid sinus massage
D Echocardiogram
E Tilt test

Answers

Question:

1. D (NICE guidelines, aged 60+)
2. E (no reliable prodrome)
3. D
4. D
5. A (though a classical history of head-turning is rare)
6. B
7. E (vasovagal syncope)
8. E
9. A (congenital long QT syndrome)
10. B (NICE guideline – although in real life the answer is E)