

EMERGENCY MEDICINE

- A 43-year-old woman presents with epigastric pain that started 4 hours ago. The woman describes the pain as being sharp and radiating to her back. She feels nauseous but has not vomited and is fully alert and oriented. The patient responds well to IV fluids and analgesia. Biochemical blood results show:

Bilirubin 8 $\mu\text{mol/L}$

ALT 38 IU/L

AST 34 IU/L

ALP 421 IU/L

Amylase 1850 U/L

The most appropriate investigation would be:

 - Abdominal ultrasound (US) scan
 - Computed tomography (CT) scan
 - Erect chest x-ray
 - Endoscopic retrograde cholangiopancreatography (ERCP)
 - Magnetic resonance imaging (MRI) scan
- A 28-year-old woman is rushed in a confused state. Her partner reports seeing the patient vomiting and breathing very rapidly before falling ill, at which point he called the ambulance. Empty aspirin packets were found close to the patient, the partner estimates it has been approximately 45 minutes since the patient may have ingested the pills. The most appropriate first-line management would be:

 - Haemodialysis
 - Activated charcoal
 - IV sodium bicarbonate
 - Gastric lavage
 - Intravenous fluids and electrolytes
- A 43-year-old man presents with profuse vomiting, abdominal pain and a faint metallic taste in the mouth. The patient is mildly jaundiced on examination with faint green discoloration of the gums. The patient denies taking any recreational drugs, but mentions he has been away on sabbatical in rural India. The most likely diagnosis is:

 - Copper poisoning
 - Magnesium poisoning
 - Iron toxicity
 - Liver failure
 - Organophosphate poisoning
- A 16-year-old boy presents in a confused state. He appears pale, sweaty and has a heart rate of 110 bpm and temperature of 37°C. Respiratory examination reveals good air entry and a respiratory rate of 12. He is accompanied by a group of friends who admit they had been drinking alcohol earlier and smoking marijuana. They deny he has any medical problems apart from mild asthma and deny ingesting any other recreational substances. Urine dipstick is negative for any significant findings. His blood glucose is 2.1 mmol/L. The most likely cause of the patient's symptoms is:

 - Diabetic ketoacidosis
 - Ethanol toxicity
 - Ecstasy ingestion
 - Asthma attack
 - Cannabis toxicity
- A 22-year-old unconscious man is brought into accident and emergency. He was found lying alone on the street by passers-by who called the ambulance and the crew mention seeing needles on the floor. The patient's Glasgow Coma Scale is 12, he has a respiratory rate of 10 and blood pressure of 97/65 mmHg. During your examination you notice pinpoint pupils. The most appropriate treatment is:

 - Mechanical ventilation
 - IV naloxone
 - IV naloxazone
 - IV naltrexone
 - Methadone
- An 18-year-old woman presents to her GP. She appears anxious and explains she has been revising for her exams but suffered an acute severe headache this morning which left her unable to work and she has not felt well ever since. She denies any recent travelling, fever or neck stiffness. She appears tearful but otherwise well, with no signs following a neurological examination. The most likely diagnosis is:

 - Tension headache
 - Migraine
 - Subarachnoid haemorrhage
 - Meningitis
 - Space-occupying lesion in the brain
- A 26-year-old man with a past medical history of asthma presents to accident and emergency with difficulty breathing. He has a respiratory rate of 35 bpm, heart rate 120 bpm and difficulty in answering questions. On auscultation, a polyphonic wheeze is heard and SpO₂ is 93 per cent. The patient is unable to perform a peak expiratory flow rate (PEFR). The most appropriate treatment is:

 - Nebulized adrenaline
 - IV magnesium sulphate
 - 100 per cent oxygen
 - Salbutamol nebulizer
 - Oral prednisolone
- A 65-year-old Asian man with type 2 diabetes complains of central chest pain which he describes as severe and crushing in nature. On appearance, the patient appears anxious, sweaty and has difficulty breathing. The most appropriate first-line treatment is:

 - Blocker
 - Glyceryl trinitrate (GTN) sublingual spray
 - Non-steroidal anti-inflammatory drug (NSAID)
 - Aspirin
 - Oxygen therapy
- A 74-year-old man with a known history of chronic obstructive pulmonary disease (COPD) presents with a 3-day history of worsening shortness of breath, wheeze, non-purulent cough and fever. He appears unwell and the following blood results were obtained:

WCC 13.8 $\times 10^9/\text{L}$

CRP 39.2 mg/L

PO₂ 49 mmHg

PCO₂ 33.2 mmHg

SaO₂ 95 per cent

- The most appropriate treatment is:**
- Oxygen therapy
 - Antibiotic treatment
 - Physiotherapy
 - Short-acting bronchodilator therapy
 - Intravenous theophylline
10. A 54-year-old known hypertensive male presented with a 3-day history of shortness of breath. The patient reported feeling unwell with a sharp pain in the left side of the chest and loss of appetite. His clinical findings included a heart rate of 117 bpm, blood pressure of 97/85 mmHg, temperature 37.2°C and a respiratory rate of 22 bpm. Respiratory examination showed reduced air entry and hyper-resonance on percussion. **The most likely diagnosis is:**
- Tension pneumothorax
 - Pneumonia
 - Pleural effusion
 - Aortic dissection
 - Pulmonary embolism
11. A 59-year-old obese woman underwent a coronary artery stent procedure. She is a well-controlled type 2 diabetic. The operation was successful. However, after 1 week during recovery, the patient complained of severe chest pain and shortness of breath. Her heart rate was 115 bpm and blood pressure 107/89 mmHg. Following resuscitation of the airway, breathing and circulation, an electrocardiogram (ECG) showed sinus tachycardia and right axis deviation. **The most appropriate treatment is:**
- Warfarin
 - Intravenous adrenaline
 - Alteplase
 - Salbutamol
 - Intravenous heparin
12. A 47-year-old man presents with a 3-day history of melana. The patient appears pale, has a heart rate of 110 bpm and blood pressure of 105/71 mmHg. The patient reports suffering a sprained ankle 1 week previously and has been using NSAIDs to control his symptoms. **The most likely diagnosis is:**
- Duodenal ulcer
 - Gastric ulcer
 - Colon cancer
 - Rectal varices
 - Diverticular disease
13. A 69-year-old woman presents in a distressed state. She is extremely breathless and an audible wheeze can be heard, frothy clear sputum is produced each time she coughs. A gallop rhythm and widespread wheezes and crackles are heard on auscultation. **The most likely diagnosis is:**
- Acute asthma attack
 - Emphysema
 - Pneumonia
 - Pulmonary oedema
 - COPD
14. A 19-year-old woman complains of general malaise and lethargy. She has recently started university after a gap year in the Western Cape of South Africa and is now returning home to visit her parents. She felt feverish with a headache which has become considerably worse by the afternoon with nausea and vomiting. Supine flexion of the patient's neck causes unassisted knee flexion. **The most likely diagnosis is:**
- Subarachnoid haemorrhage
 - Encephalitis
 - Bacterial meningitis
 - Epstein-Barr virus (EBV)
 - Malaria
15. A 17-year-old male is brought unconscious to accident and emergency. His friends report they were at a nightclub while celebrating his birthday, they deny having any alcohol or recreational drugs. The club has strobe light effects and while these were on he suffered a seizure. The friends called an ambulance and while waiting the patient suffered another seizure shortly after the first, he was not conscious during any of the attacks. **The most appropriate treatment is:**
- Intravenous lorazepam
 - Rectal diazepam
 - Intravenous thiamine
 - Intravenous midazolam
 - Intravenous thiopental
16. A 20-year-old woman presents with a 3-day history of diffuse acute abdominal pain. The patient reports feeling generally unwell earlier during the week with a strange sensation in her mouth. She denies any recent travel history or sexual activity. On examination, skin turgor is reduced and a fruity odour can be smelt. **The most likely diagnosis is:**
- Pancreatitis
 - Diabetic ketoacidosis
 - Acute porphyria
 - Liver failure
 - Maple syrup urine disease
17. A 75-year-old woman presents with confusion to accident and emergency, she was brought in by her neighbours who found her outside her house in her nightclothes during the middle of the day. She appears oedematous in appearance, particularly of her neck. The patient's hand is visibly shaking and while coughing a rust-coloured sputum is produced. Blood tests reveal a mild hyponatraemia while blood pressure is 110/82. **The most likely diagnosis is:**
- Sepsis
 - Pneumonia
 - Myxoedema coma
 - Lung cancer
 - Schmidt's syndrome
18. A 52-year-old man presents after collapsing at home. He appears pale on appearance with cold extremities. Blood pressure is 97/73 mmHg, heart rate 110 bpm, temperature 36.9°C and an ECG shows normal findings. Blood culture and urine culture are negative for any findings. He reports returning from a weekend break in Wales, but forgot to take his medication for Crohn's disease with him. **The most likely diagnosis is:**
- Addisonian crisis
 - Sepsis
 - Myocardial infarction
 - Abdominal aneurysm rupture
 - Nelson's syndrome
19. A 44-year-old woman is brought after becoming ill at the airport after a flight from Australia. She presents with mild pain that causes her to catch her breath and has been coughing blood-stained sputum. On examination, her respiratory rate is 25, heart rate 100 bpm and blood pressure is 130/85 mmHg. **The most appropriate management is:**
- D-dimers
 - Chest x-ray
 - Start heparin therapy

- d. Start warfarin
e. CT pulmonary angiography
20. A 27-year-old woman visits her GP complaining of a fever. She returned from India almost 2 weeks ago and had felt unwell but attributed this to jet lag. After suffering from a fever she rested for 2 days and on recovering returned to work as an accountant. After another 2 days she now reports waking up at night again with a high fever, feeling drowsy and confused. On presentation she appears unwell, pale and sweaty. The most likely diagnosis is:
- Plasmodium falciparum
 - Plasmodium vivax
 - Plasmodium malariae
 - Plasmodium ovale
 - Plasmodium knowlesi
21. A 35-year-old man complains of a three-month history of intermittent excruciating headaches. They are very variable and occur from once a month to three times a week. The headaches are associated with extreme anxiety and sweating. On examination, the patient's blood pressure is 152/95 mmHg and during palpation of the abdomen the patient's skin flushes red. The most likely diagnosis is:
- Cluster headache
 - Phaeochromocytoma
 - Subarachnoid haemorrhage
 - Migraine
 - Temporal arteritis
22. A 47-year-old obese Asian man complains of a sharp pain on the left side of his chest with difficulty breathing. The pain started a few hours ago and does not radiate anywhere, the patient also reports feeling increasingly short of breath and became extremely anxious when he started coughing blood-stained sputum. He states he has been flying all week on business trips and is getting late for his next flight. The most likely diagnosis is:
- Myocardial infarction
 - Muscular injury
 - Pneumothorax
 - Pulmonary embolism
 - Pericarditis
23. A 53-year-old severely distressed and confused woman presents to accident and emergency with her husband. A collateral history reveals she has been suffering increasingly severe tremors, sweating and weight loss during the week. Since yesterday she has started to suffer from palpitations and increasing confusion. Blood pressure is 157/93 mmHg and there is an irregularly irregular pulse. The most likely diagnosis is:
- Phaeochromocytoma
 - Carcinoid tumour
 - Thyroid crisis
 - Addisonian crisis
 - Serotonin syndrome
24. A 57-year-old man complains of a two-month history of chest pain which has recently become more severe. The patient describes the pain as a tightness occurring in the centre of the chest which he most often notices when reaching the top of the stairs. The pain usually recedes after a short rest. In the last 2 weeks he has noticed the pain is more severe and, unless he is sitting down or sleeping, is present all the time. The most likely diagnosis is:
- Classical angina
 - Crescendo angina
 - Decubitus angina
 - Prinzmetal angina
 - Nocturnal angina
25. A 57-year-old woman complains of a headache and weakness on the right side of her body. The headache is normally worst first thing in the morning and is particularly painful on her left hand side. The weakness has occurred very gradually over several weeks and is most noticeable when lifting objects. On examination, her temperature is 38.5°C, she has recently had a left ear infection which is not causing any pain now. The most likely diagnosis is:
- Cerebral abscess
 - Otitis media
 - Subdural haemorrhage
 - Mollaret's meningitis
 - Cerebellar abscess
26. A 42-year-old man presents with a 2-day history of severe chest pain. The patient reports a sudden ripping sensation at the front of the chest that occasionally radiates to the back. The patient has tried paracetamol and ibuprofen to alleviate the pain, but has had no success. The patient suffers from poorly controlled hypertension and at the last GP appointment his blood pressure was 167/95 mmHg. The most definitive investigation is:
- ECG
 - Chest x-ray
 - MRI scan
 - Transoesophageal echo
 - CT scan with contrast
27. A 53-year-old woman with hypertension presents with muscle weakness and painful cramping. She admits some confusion with her new medication spironolactone after a recent dosage change, and may have taken more than the new prescribed dose. On examination, the patient appears well, an ECG shows absent p waves and widened QRS complexes. The most appropriate treatment is:
- Intravenous fluids only
 - Intravenous 10 per cent calcium gluconate
 - Nebulized salbutamol
 - Intravenous insulin and dextrose
 - Intravenous insulin alone
28. A 17-year-old boy is rushed after breathing difficulties in a restaurant. The parents report the patient feeling unwell after eating a cake containing nuts. The patient has swollen lips and tongue and an audible wheeze is heard. The most appropriate first-line treatment is:
- 0.05 mg intravenous adrenaline
 - 100 mg intravenous hydrocortisone
 - 20 mg intravenous chlorphenamine
 - 0.5 mg intramuscular adrenaline
 - 0.3 mg intramuscular adrenaline
29. A 51-year-old Caucasian male with poorly controlled hypertension presents to accident and emergency with confusion, nausea and vomiting. His daughter visits him weekly and called the ambulance on finding him in this state at home. Blood pressure measurement shows 200/140 mmHg. The most appropriate management is:
- Thiazide diuretic
 - Angiotensin II receptor antagonist
 - Calcium channel blocker
 - ACE inhibitor
 - Beta blocker

30. A 67-year-old woman suffered a fracture to her hip during a fall and undergoes a successful hip replacement. After 2 weeks, the patient complains of pain in her right leg, particularly on movement. On examination, the leg is swollen below the knee, erythematous and tender on palpation. The most appropriate management is:
- Unfractionated heparin
 - Low weight molecular heparin
 - Warfarin
 - Early ambulation
 - Thrombolytic therapy
31. A 29-year-old woman is brought after suffering from a seizure at work witnessed by a colleague. She reports the patient has been unwell for the past week with headaches and nasal congestion, but refused any sick leave. The patient has a temperature of 38.3°C, a swollen bulging eye and an ipsilateral gaze palsy. The most likely diagnosis is:
- Cavernous sinus thrombosis
 - Giant cell arteritis
 - Duane syndrome
 - Cerebral abscess
 - Meningitis
32. A 30-year-old man is brought by his wife in a confused state. After an argument at home, the wife had left the patient and on returning found him unconscious. She suspects he may have made a suicide attempt but had not thought to look for any pills or bottles close to the patient. While waiting to be seen, the patient suffers a seizure. On recovery, an examination shows the patient's temperature is 39°C, pulse is irregular, respiratory rate is 20 and the patient's pupils are dilated. An ECG recording reveals tachycardia and widened QRS complexes, while a blood gas is normal. The most likely substance ingested is:
- Carbamazepine
 - Gabapentin
 - Aspirin
 - Sodium valproate
 - Amitriptyline
33. A 49-year-old man is assaulted by a gang and is brought into accident and emergency. After resuscitation, he regains consciousness with a Glasgow Coma Scale (GCS) of 15. He has suffered multiple fractures of the left leg and left arm but remains stable. While in the intensive care unit, he becomes agitated and complains of difficulty breathing which does not improve despite high flow oxygen. You notice a widespread petechial rash. The most likely diagnosis is:
- Cardiac tamponade
 - Fat embolism
 - Pulmonary embolism
 - Disseminated intravascular coagulation
 - Pulmonary infarction
34. A 65-year-old man presents with a 25-minute history of severe chest pain that he describes as 'gripping' in nature. The pain does not radiate anywhere and is the most severe pain the patient has experienced. The patient is sweaty and anxious in appearance, tachycardic and has a normal blood pressure. An ECG shows hyperacute T-waves and serum creatinine kinase levels are not raised. The patient has a history of peptic ulcer disease but is otherwise healthy. The most likely diagnosis is:
- Prinzmetal angina
 - Gastro-oesophageal reflux disease (GORD)
 - Tension pneumothorax
 - Myocardial infarction
 - Oesophageal rupture
35. A 19-year-old woman presents with an acute episode of feeling unwell. While in the middle of moving to a new house, she experienced an extremely severe pain near the back of her head. She denies any recent travelling, fever or neck stiffness. The most definitive investigation is:
- Lumbar puncture
 - Blood culture
 - CT scan
 - Fundoscopy
 - MRI scan
36. qSOFA criteria for severe sepsis is all except:
- Respiratory rate > 22
 - BP < 100 mm Hg
 - Serum Procalcitonin > 3 SD
 - Altered sensorium

Emergency Medicine - Answers

- | | | | | |
|------|-------|-------|-------|-------|
| 1. a | 9. d | 17. c | 25. a | 33. b |
| 2. e | 10. a | 18. a | 26. e | 34. d |
| 3. a | 11. e | 19. a | 27. b | 35. c |
| 4. b | 12. b | 20. a | 28. d | 36. c |
| 5. b | 13. d | 21. b | 29. d | |
| 6. c | 14. c | 22. d | 30. b | |
| 7. c | 15. b | 23. c | 31. a | |
| 8. b | 16. b | 24. b | 32. e | |