

2. An anxious 22-year-old female with a high respiration rate has the following arterial blood gas results:

pH	7.27	(7.36-7.44)
PCO ₂	2.6 kPa	(4.7-6.0)
Base deficit	-12 mmol/l	

What is the interpretation of the acid-base status?

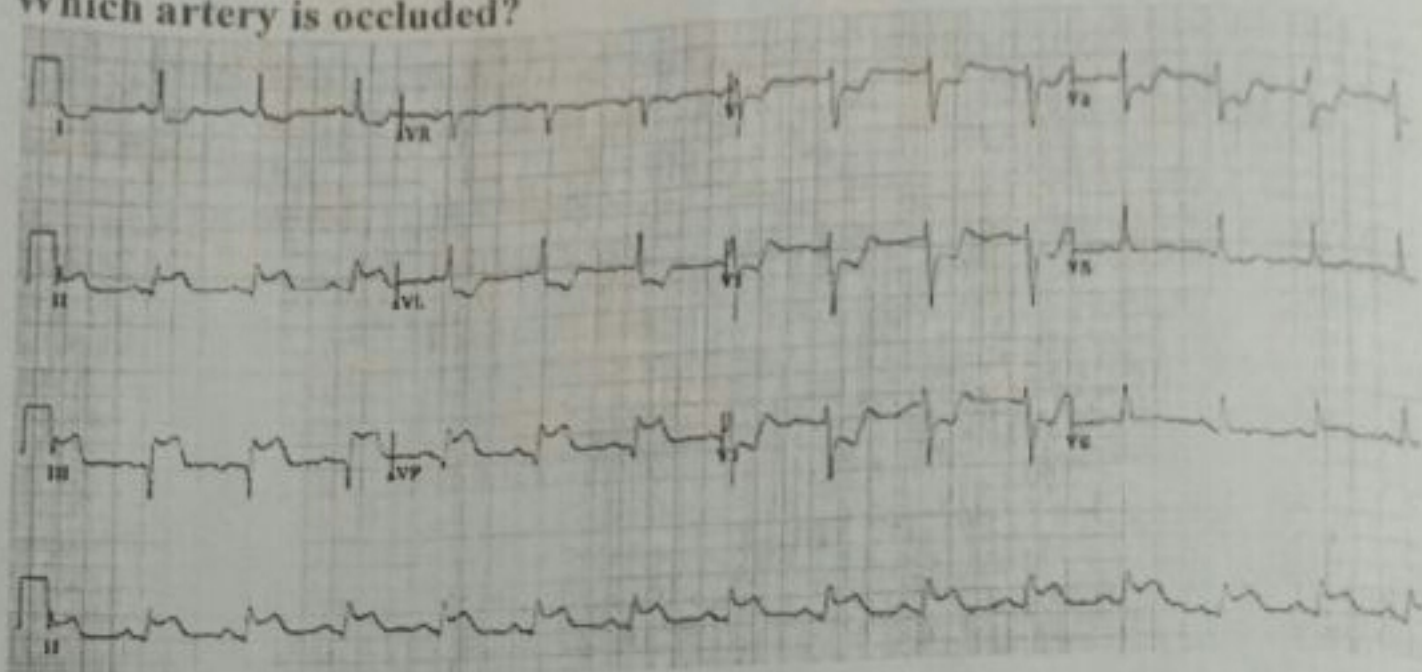
- A. Combined metabolic and respiratory acidosis
- B. Combined metabolic and respiratory alkalosis
- C. Metabolic acidosis with some compensatory respiratory alkalosis
- D. Respiratory acidosis with some compensatory metabolic alkalosis
- E. Respiratory alkalosis with some compensatory metabolic acidosis

3. A 19-year-old male student attends casualty complaining of a urethral discharge one week after having casual unprotected sex. Gram stain shows numerous neutrophils, some of which contain Gram negative intracellular Diplococci. The patient is treated with ceftriaxone, 250 mg as an intramuscular injection. Five days later, the patient re-attends with persisting discharge. Which of the following is the *most likely* cause of this discharge?

- A. Chlamydia trachomatis ●
- B. E. Coli
- C. Penicillin-resistant Neisseria gonorrhoeae
- D. Re-infection with Neisseria gonorrhoeae
- E. Urethral stricture

الجلود من أمراضها دار الكوب
عقابه للمناشيه
دكتور انتم ويا النوفيه

96. A 64 year-old man, presents to ER with syncope. ECG was done:
Which artery is occluded?

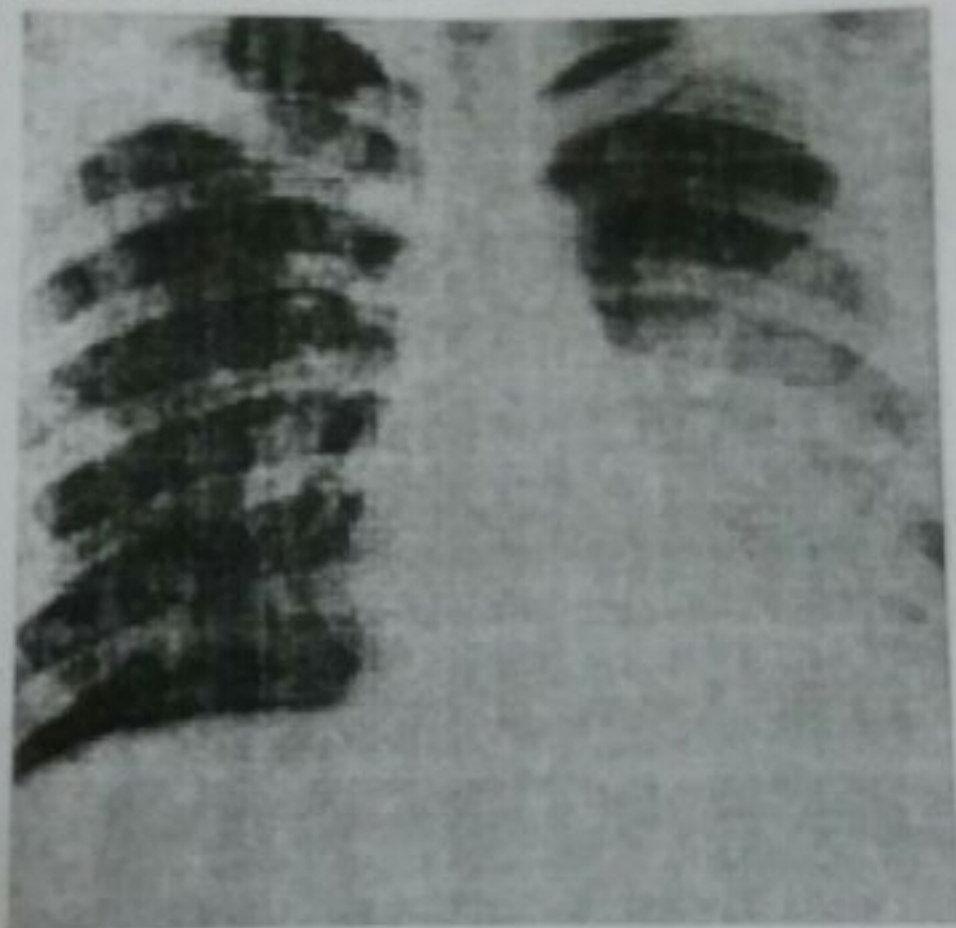


- A. Circumflex
- B. Left Anterior Descending
- C. Left Main Stem
- D. Main Pulmonary artery
- ☒ E. Right Coronary Artery

100. A 50-year-old male is admitted with a 3 hour history of central chest pain sweating and nausea. He has no relevant past medical history although his father died of an MI at the age of 48 and he is a smoker of 5 cigarettes per day. He is seen in the morning on the consultant ward round 12 hours after admission and his pain has now settled. Examination reveals no specific abnormality and his ECG is normal. Which of the following investigations would be *most appropriate* for this patient?

- A. Coronary Angiography.
- B. Echocardiography.
- C. Exercise ECG.
- D. Thallium scan.
- E. Troponin.

1. A 27-year-old man presents with chest pain and feeling unwell. He describes cough with blood-tinged sputum, chills, and fever of 2 days duration. Physical findings reveal dullness and moist rales in the left lower chest. His CXR is shown.



Which of the following is the *most likely* diagnosis?

- A. Atelectasis, left lower lobe
- ☒ B. Pneumonia, left lower lobe
- C. Pulmonary embolism
- D. Sarcoidosis
- E. Tuberculosis

6. A 28-year-old lady presents with a three day history of a painful swollen right calf. Her coagulation screen shows:

Prothrombin time	13 s	(11.5-15.5)
Thrombin time	13 s	(13)
Activated partial thromboplastin time	78 s	(30-40)

The APTT was not corrected when mixed with normal plasma. What is the cause of the clotting abnormality?

- A. Chronic liver disease
- B. Disseminated intravascular coagulation
- C. Hemophilia
- ☒ D. Lupus anticoagulant
- E. von Willebrand disease

7. A 45-year-old woman was admitted to hospital with difficulty breathing. She was admitted from a local restaurant after becoming suddenly unwell while eating curry. On arrival in casualty, her face and lips were noted to be grossly swollen and there was an audible inspiratory wheeze. There was no past history of allergies. She had been diagnosed with hypertension by her GP and started on captopril ten days previously. Investigations showed:

Serum IgE	>1000 KU/L	(<120)
Mast cell tryptase	Normal after 30 minutes	

What is the *most likely* cause of this reaction?

- A. C1 inhibitor deficiency
- B. Captopril-induced angioedema
- C. Hyperimmunoglobulinemia E
- D. Mastocytosis
- ☒ E. Nut allergy

8. A 45-year-old woman presents with pruritis. On examination she has clubbing, palmar erythema and spider naevi. There is also evidence of excoriations and xanthelasma. Blood results demonstrate deranged liver function tests with a predominantly cholestatic picture but the abdominal ultrasound scan is normal. A subsequent autoimmune screen is positive for anti-mitochondrial antibodies. Which of the following HLA antigens is associated with this disease?

- A. HLA-A3
- B. HLA-B27
- C. HLA-B35
- D. HLA-B5
- ☒ E. HLA-DR8

73. Relative to the primary immunological response, secondary and later booster responses to a given hapten-protein complex can be associated with which one of the following?

- A. Antibodies that are less efficient in preventing specific disease
- B. Decreased antibody avidity for the original hapten-protein complex
- C. Increased antibody affinity for the hapten ●
- D. Lower titers of antibody
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74. A 60-year-old woman complains of jaundice, pruritus, and anorexia for 2 weeks. She has one or two alcoholic drinks on social occasions and has smoked one pack of cigarettes daily for 30 years. She is currently taking a Thiazide diuretic for mild hypertension. Her temperature is 36.8°C, blood pressure is 130/80 mm Hg, pulse is 80/min, and respirations are 14/min. Physical examination confirms icteric discoloration of skin and mucosae. Abdominal examination is remarkable for slight tenderness in the right upper quadrant, and the liver is palpable 1 cm below the right costal arch. The spleen is not palpable. Serum chemistry tests show: AST 60 U/L, ALT 40 U/L, Alkaline phosphatase 1000 U/L, Total bilirubin 5.5 mg/dL, and Direct bilirubin 4.0 mg/dL. Which of the following is the *most appropriate* next step in diagnosis?

- A. Abdominal CT or MRI scan
- B. Abdominal ultrasound
- C. Endoscopic retrograde cholangiopancreatography
- D. Percutaneous liver biopsy
- E. Percutaneous transhepatic cholangiography

77. A 42-year-old man is hospitalized with chest pain. The patient is awake and alert. His wife comes to you demanding information about the patient, saying that she is his wife. She shows her identification card verifying this. You tell her about his condition. What rule is violated here?

- ☒ A. The principle of confidentiality
- B. The principle of patient autonomy
- C. The principle of social justice
- D. The principle of professional competence
- E. The principle of honesty with patients

78. An 82-year-old woman complains of worsening headaches and episodes of transient visual loss and diplopia. When she chews, her jaw muscles ache until she stops chewing. She has a mild normocytic anemia; sedimentation rate is 95. What is the most likely diagnosis?

- A. Cluster headache
- B. Migraine headache
- ☒ C. Temporal arteritis
- D. Temporomandibular joint arthritis
- E. Trigeminal neuralgia

79. A 73-year-old smoker hypertensive man has had 3 episodes of visual loss in the right eye. No dyspnea, chest pain, palpitations, or unilateral weakness or numbness. Examination reveals no abnormality. An ECG shows no abnormality. Initial laboratory studies are normal. Both noncontrast CT scan of the head and MR scan of the brain are normal. What is the best next step in this patient's management?

- A. Begin anticoagulation with LMW heparin and warfarin
- B. Begin lamotrigine for probable nonconvulsive seizure
- C. Check for antiphospholipid antibodies and homocysteine levels
- ☒ D. Order a carotid duplex ultrasonogram and begin antiplatelet therapy
- E. Obtain an echocardiogram and start warfarin

80. A 61-year-old man presents for an elective surgical incision and drainage procedure. The patient has an 8-year history of hepatitis C infection with well-documented cirrhosis and portal hypertension. He has a large hematoma on his thigh that is suspected to have necrotic tissue underlying it and therefore requires debridement. On preoperative screening, his prothrombin time is noted to be 17.4 seconds. Transfusion of which of the following is the most appropriate next step in management of this patient prior to his procedure?

- A. Cryoprecipitate
- B. Fresh frozen plasma
- C. Packed red blood cells
- D. Platelets
- E. Whole blood

81. A 50-year-old man presents with arthralgias, hepatomegaly, and increased skin pigmentation for 3 months. Examination reveals a bronze color of the skin. The liver is palpable 3 cm below the right costal arch, but there is no splenomegaly. Moderately advanced testicular atrophy is appreciated. An S3 sound is heard on cardiac auscultation. Laboratory studies show: AST 80 U/L, ALT 70 U/L, Alkaline phosphatase 120 U/L, Bilirubin, total 1.5 mg/dL, Ferritin 400 ng/dL (N: 15-200), Transferrin saturation 60% (N: 15-50%), Glucose, fasting 180 mg/dL. Serologic tests for hepatitis virus antibodies are negative. Which of the following investigations would be the *most appropriate* next step in diagnosis?

- A. CT or MRI studies of the liver
- B. Determination of hepatic iron content in a liver biopsy
- C. Measurement of serum alpha 1 -antitrypsin
- D. Measurement of urinary copper excretion
- E. Serum titers of antinuclear and antimitochondrial antibodies

75. A 42-year-old man sees you because of obesity. He has been gradually gaining weight since age of 18. Many previous attempts at dieting have resulted in transient weight loss of 3 to 5 kilograms, which he then rapidly regains. Recent attempts at exercise have been limited because of bilateral knee pain and swelling. On examination his BMI is 41. Blood pressure with a large cuff is 150/95. Baseline laboratory studies including CBC, biochemical profile, TSH and lipids are normal with the exception of fasting serum glucose which is 145 mg/dL. What is the *next best step in management*?

- A. Discuss bariatric surgery with the patient
- B. Insert a bariatric intragastric balloon
- C. Prescribe chitocal and green tea
- D. Recommend a 1000 calorie per day diet
- E. Recommend a low-fat diet

76. A 60-year-old man presents with epigastric pain, anorexia and weight loss since 6 months. He is a smoker since several years and passed black stool since 1 month. Endoscopy revealed the following in the stomach.



What to do next?

- A. To inject epinephrine
- B. To take biopsies
- C. To test for *Helicobacter pylori*
- D. Transfer into surgery
- E. Trial of medical treatment by PPI

63. A 22-year-old male student is admitted with weakness and tiredness. He has otherwise been well. Examination reveals a petechial rash on the lower legs and conjunctival pallor. He takes no medication and denies any illicit drug use. Investigations revealed: Hemoglobin 4 g/dL, White cell count $1 \times 10^9/L$, Platelets $20 \times 10^9/L$, Clotting profile Normal and Liver function tests Normal. Which of the following is the *most likely* diagnosis?

- A. Acute lymphocytic leukemia
- B. Acute myeloid leukemia
- ☒ C. Aplastic anaemia
- D. Henoch-Schonlein Purpura
- E. Hodgkin's lymphoma

64. A 41-year-old woman claims she is "certain I have breast cancer." Workup by her internist, including physical examination and mammogram, is negative. What is the diagnosis that best fits the scenario given?

- A. Agoraphobia
- B. borderline personality disorder.
- C. conversion disorder.
- ☒ D. hypochondriasis.
- E. somatization disorder

65. Two weeks after hospital discharge for documented myocardial infarction, a 65-year-old returns to your office concerned about low-grade fever and pleuritic chest pain. There is no associated shortness of breath. Lungs are clear to auscultation and the heart is free of murmur, gallop, or rub. ECG is unchanged from the last one in the hospital. Which therapy is most likely to be effective?

- ☒ A. An anti-inflammatory agent
- B. An anxiolytic agent
- C. An increase in antianginal medication
- D. Antibiotics
- E. Anticoagulation with warfarin (Coumadin)

66. This 34 year old female presents with a one month history of weight loss, fatigue and this painless rash on her shin.



Which of the following investigations would you choose for this patient?

- A. ACE concentrations
- ☒ B. Anti-TSH receptor antibodies
- C. Chest X-ray
- D. Fasting plasma glucose
- E. Upper endoscopy with duodenal biopsy

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9. A 60 year old man has a right wrist drop. On examination he has an absent triceps jerk on the right as well as an area of sensory loss over the dorsum of the middle finger on the right hand.



Where is the lesion?

- A. Brachial nerve
- B. Median nerve
- C. Musculocutaneous nerve
- ☒ D. Radial nerve
- E. Ulnar nerve

10. A 32-year-old man with HIV disease presents to clinic complaining of lassitude and weakness. Results 1 and 2, shown below, were taken eight weeks apart.

	Results 1	Results 2
• Hb	14.5 g/dL	7.6 g/dL
• WBC	$4.0 \times 10^9/L$	$4.3 \times 10^9/L$
• Platelets	$70 \times 10^9/L$	$200 \times 10^9/L$
• CD4	120 cells/mm ³	250 cells/mm ³

What is the *most likely* explanation for these results?

- A. Anti-retroviral therapy discontinued
- ☒ B. Co-trimoxazole started as prophylaxis against PCP
- C. Cytomegalovirus infection
- D. Infiltration of bone marrow by Mycobacterium avium complex
- ☒ E. Started highly active antiretroviral therapy

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- C. Penicillin-resistant Neisseria gonorrhoeae
- D. Re-infection with Neisseria gonorrhoeae
- E. Urethral stricture

4. A 26-year-old man attends for a tooth extraction. He reports prolonged bleeding after a tooth extraction 2 years previously. He has had no other history of prolonged bleeding. He is otherwise fit and well. On further questioning he said his mother had recently been referred for recurrent nose bleeds and menorrhagia. He was also aware that his sister had been seen in the past for menorrhagia. The dental extraction cannot be delayed. What should the dentist be advised to give the patient to reduce the risk of significant bleeding?

- A. Cryoprecipitate
- B. Factor VIII replacement
- C. Fresh frozen plasma
- D. Tranexamic acid
- ☒ E. von Willebrand Factor concentrate

5. A 72-year-old male diabetic presents with weakness and lethargy. He was diagnosed with type 2 diabetes mellitus 12 years ago and remains on gliclazide and metformin therapy and takes atenolol for hypertension. He has loss of pin prick and vibration sensation to the ankle in both legs and a background diabetic retinopathy.

Blood pressure	165/90 mmHg lying and standing
Serum sodium	135 mEq/l
serum potassium	5.7 mEq/l
Urea	60mg/dl
Serum creatinine	2.5 mg/dl
Plasma glucose	190mg/dl
HbA1c	7.8%
pH	7.29

What is the likely cause for these electrolyte abnormalities?

- ☒ A. Acute renal failure
- B. Addison's disease
- C. Hyporeninemic hypoaldosteronism
- D. Liddle's syndrome
- ☒ E. Proximal renal tubular acidosis

11. A 36-year-old female recently diagnosed with thyrotoxicosis presents with a sore throat. One month ago she commenced carbimazole 40 mg daily plus propranolol 40 mg bid and began to feel better but over the last one week she has been aware of a sore throat with painful swallowing. On examination, her pulse is 80 beats per minute regular and she has a modest non-tender goitre. No other abnormalities are noted. Her investigations revealed:

Hemoglobin	12.5 g/dl	(11.5-16.5)
Platelets	$220 \times 10^9/l$	(150-400)
White cell count	$3.8 \times 10^9/l$	(4-11)
Neutrophils	$1.4 \times 10^9/l$	(1.5-7)
Lymphocytes	$2 \times 10^9/l$	(1.5-4)
Free T4	23.1 pmol/l	(10-22)
TSH	<0.05	(0.4-5)
TSH receptor antibody	Positive	

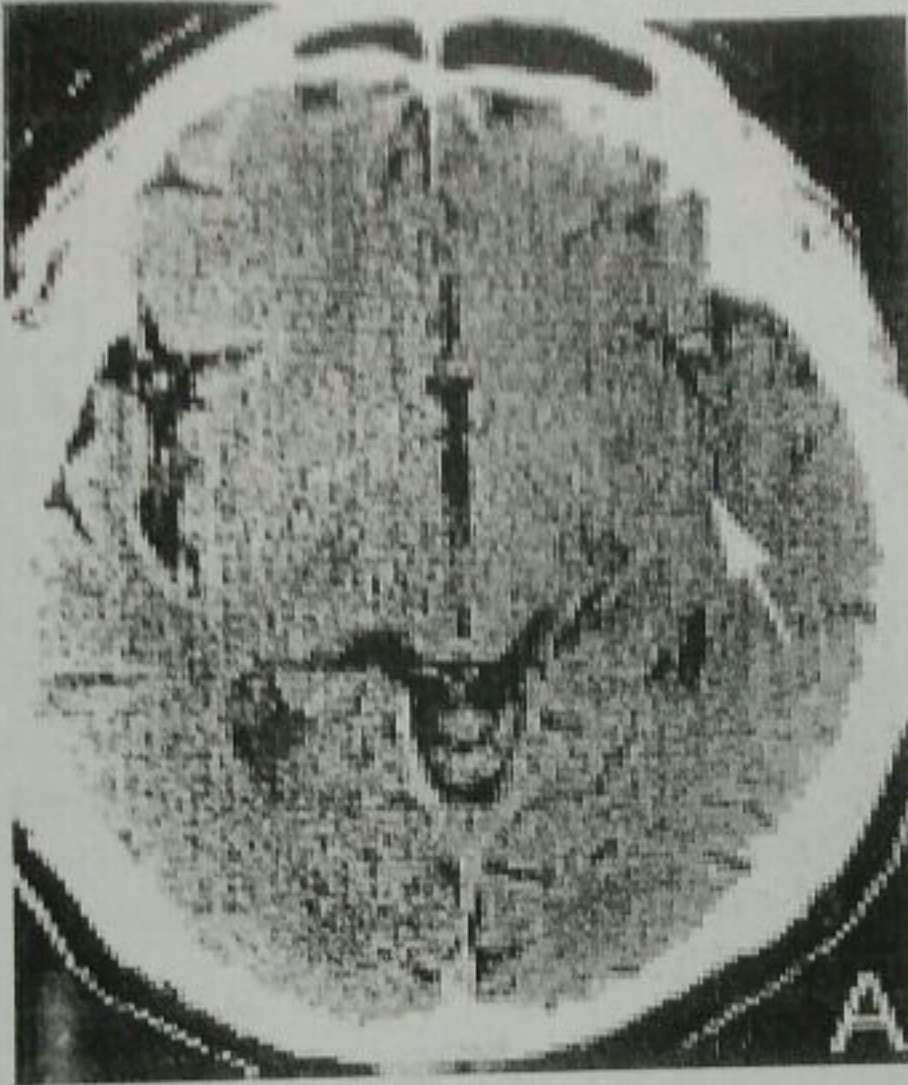
What is the *most appropriate* treatment for this patient?

- A. Add prednisolone therapy
- B. Continue carbimazole
- C. Stop carbimazole and change to propylthiouracil
- ☒ D. Stop carbimazole and treat with radioactive iodine
- E. Thyroidectomy

12. A 15-year-old girl is brought to the emergency department by her parents. She has no past medical history of note. In her parents' absence, she says that she and her father had an argument several days previously and that as a result she took a number of paracetamol tablets - but did not intend to kill herself. Which of the following is the best indicator of the degree of hepatocellular damage?

- A. Aspartate transaminase level
- B. Bilirubin level
- ☒ C. INR
- D. Paracetamol level
- E. Quantity of paracetamol ingested

21. A 65-year-old man presents with new-onset aphasia and left-sided homonymous hemianopsia. Results of CT of the head are shown in the image.



Which vascular territory is involved?

- A. Anterior cerebral artery
- B. Basilar artery
- C. Lacunar territories
- ☒ D. Middle cerebral artery
- E. Posterior cerebral artery

14. A 35-year-old woman with cirrhosis is admitted with deteriorating confusion and deteriorating ascites. On examination, she is mildly jaundiced, has a temperature of 37.5°C , is agitated and confused and has a flapping tremor of the outstretched hands. Abdominal examination reveals tense ascites. Investigations revealed:

• CBC	Mild leucocytosis	
• Sodium	142 mEq/l	
• Potassium	4.2 mEq/l	
• Urea	30mg/dl	
• Creatinine	1.6 mg/dl	
• Glucose	100 mg/dl	
• Bilirubin	4.5 mg/dl	
• AST	110 IU/l	(5-40)
• Alkaline phosphatase	550 IU/l	(50-110)

Ascitic tap polymorphonuclear cell count of 350 cells per mm^3 .

Which of the following is the *most appropriate* treatment for this patient?

- ☒ A. Intravenous cefotaxime
- B. Intravenous lorazepam
- C. Intravenous metronidazole
- D. IV Glypressin
- E. Oral neomycin

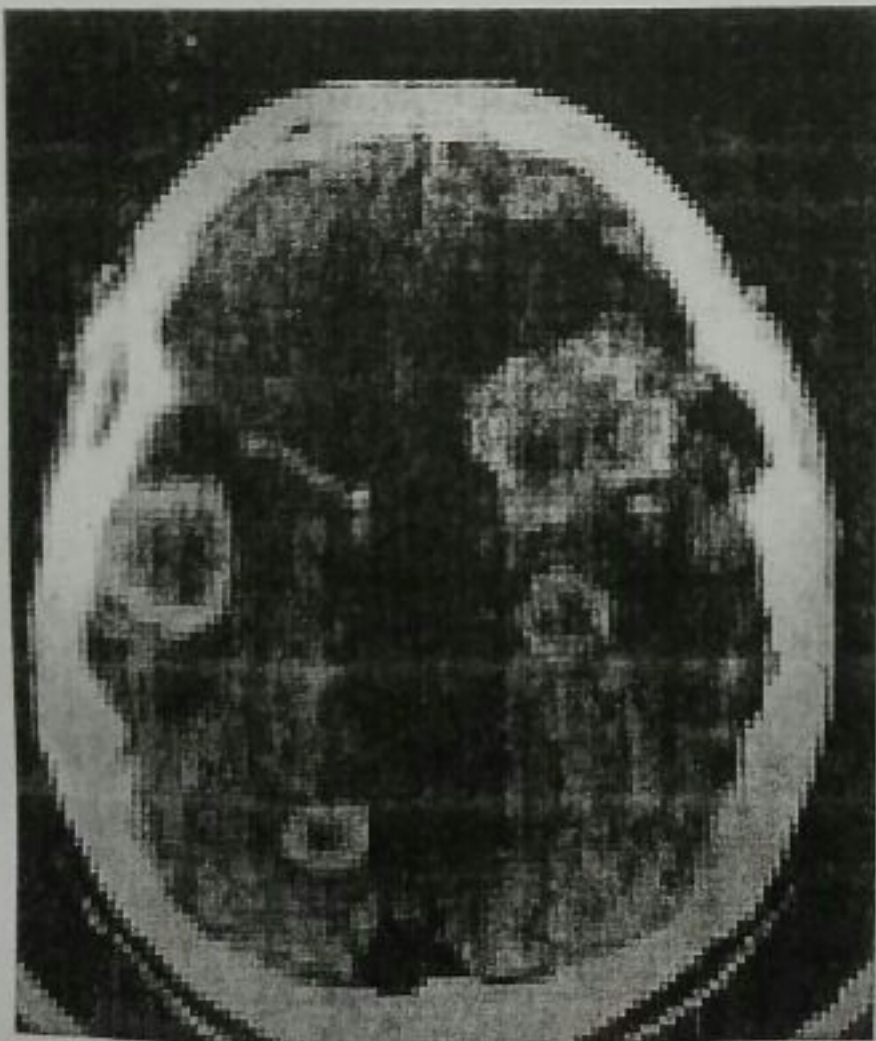
15. A 65-year-old woman presents with a one month history of jaundice. She reports her urine is darker than normal and her stools are pale in Color. On direct questioning she admits pruritis but denies abdominal pain. There is no history of foreign travel. She has lost approximately 6 kg in weight. On examination she is jaundiced, there are no stigmata of chronic liver disease and no asterixis. Abdominal examination reveals hepatomegaly 4 cm below the costal margin. Which tumor marker is *most likely* to be elevated?

- A. AFP
- B. Beta-hCG
- C. CA 125
- ☒ D. CA 19-9
- E. CEA

56. A 65-year-old man with a history of dyspepsia is found to have an antral gastric mass during upper endoscopy. Examination of the biopsy revealed gastric MALT lymphoma. What treatment should be offered?

- A. CHOP chemotherapy
- ☒ B. *H. pylori* eradication
- C. Laser ablation
- D. Partial gastrectomy
- E. Submucosal resection

57. A 47-year-old man with HIV disease presents to hospital with a tonic-clonic seizure. He had initially presented six months previously with *Pneumocystis carinii* pneumonia with a CD4 T-lymphocyte count of 10 cells/mm³ and had subsequently started on highly active antiretroviral therapy. His most recent CD4 count was 50 cells/mm³. On examination he has no focal weakness, but both plantar responses are extensor. Funduscopy is normal. A CT scan of his brain is shown.



What is the diagnosis?

- A. AIDS- related dementia
- B. Brain abscess
- ☒ C. Cerebral toxoplasmosis
- D. Primary CNS lymphoma
- E. Progressive multifocal leukoencephalopathy

61. A 30-year-old nursing student presents with confusion, sweating, hunger, and fatigue. Blood sugar is 40 mg/dL. The patient has no history of diabetes mellitus, although her sister is an insulin-dependent diabetic. The patient has had several similar episodes over the past year, all occurring just prior to reporting for work in the early morning. At the time of hypoglycemia the patient is found to have a high insulin level and a low C peptide level. Which of the following is the *most likely* diagnosis?

- ☒ A. Factitious hypoglycemia
- B. Insulinoma
- C. Pheochromocytoma
- D. Reactive hypoglycemia
- E. Sulfonylurea use

62. A 35 year-old man presents with severe headache and confusion. What is the most likely diagnosis?



- A. Cerebral infarction
- B. Epidural hematoma
- C. Intracerebral hemorrhage
- ☒ D. Subarachnoid hemorrhage
- E. Subdural hematoma

16. An 85-year-old woman presents to the ER with oliguria and dark urine. She has acute kidney injury with a glomerular filtration rate of $32 \text{ ml/min/1.73m}^2$ and creatine kinase is raised at 25,000 (normal range 25-195 IU/l). You commence initial therapy and prescribe her regular medications. Which of her medications is it most important to stop in these circumstances?

- A. Aspirin 75 mg
- B. Oral calcium supplements
- C. Paracetamol 1 g
- D. Salbutamol inhaler
- E. Simvastatin 40 mg

17. A 16-year-old male presents with acute severe asthma. On examination his peripheral pulse volume reduced during inspiration. Which one of the following is the most likely explanation for this clinical sign?

- A. A falling heart rate on inspiration
- B. Myocardial depression due to hypoxia
- C. Peripheral vasodilatation
- D. Reduced left atrial filling pressure on inspiration
- E. The cardiac effect of high dose beta agonist bronchodilator drugs

18. A 65-year-old gentleman with type 2 diabetes mellitus and hypertension is started on an ACE-inhibitor. Which of the following is the most appropriate time period to check his creatinine and potassium after commencing the medication?

- A. 24 hours after starting the medication
- B. 48 hours after starting the medication
- C. One to two weeks after starting the medication
- D. Six hours after he takes the medication
- E. Two months after starting the medication

50. A 34-year-old lady presented with tiredness and lethargy. Her full blood count shows:

- Hemoglobin 10.3 g/dL
- Platelet count $320 \times 10^9/L$
- White Cell Count $10.6 \times 10^9/L$
- MCV 68 fL
- HbA₂ 5.2% (N. 2-3)

Which of the following is the *most likely* diagnosis?

- A. Acute myeloid leukaemia
- B. Beta-thalassemia major
- ☒ C. Beta-thalassemia trait
- D. Hereditary spherocytosis
- E. Sickle cell disease

51. A 75-year-old female presents with an acute infective exacerbation of her long standing Chronic Obstructive Airways Disease. Blood gas analysis whilst she was receiving oxygen shows:

- PH 7.14
- pO₂ 135 mmHg
- pCO₂ 80 mmHg

What is the *most appropriate* immediate management for this patient?

- ☒ A. Continuous Positive Airway Pressure
- B. Doxapram infusion
- C. Invasive Ventilation
- D. Nebulized salbutamol with ipratropium
- ☒ E. Reduce inspired oxygen concentration

52. A 62 year- old diabetic hypertensive male patient presented with recent history of nausea, vomiting, oliguria. Patient's baseline serum creatinine two years ago was 1.7 mg/dl. The patient was fasting in Ramadan and examination showed loss of skin turgor and bilateral lower limb numbness. BP: 100/50 mm Hg. Serum creatinine: 8.5 mg/dl, blood urea: 182 mg/dl, Potassium: 5.1 mEq/L, Sodium: 149mEq/L, Ca 8 mg/dl, PO₄: 5.5 mg/dl, urine analysis: protien 2+. The patient was on Enalapril 10 mg . What is the *most probable* diagnosis?

- ☒ A. Acute on top of Chronic Kidney Disease
- B. Acute interstitial nephritis
- C. Acute papillary necrosis
- D. Myeloma cast nephropathy
- E. Rapidly progressive glomerulonephritis

47. A 30 year old lady has altered bowel habit. At the gastroenterology clinic, her symptoms are reviewed. She has a 2 year history of bloating and abdominal pains. Some weeks she is constipated and during others she has diarrhoea. What is the likely diagnosis?

- A. Coeliac disease
- B. Inflammatory bowel disease
- ☒ C. Irritable bowel syndrome
- D. Tropical sprue
- E. Whipple's disease

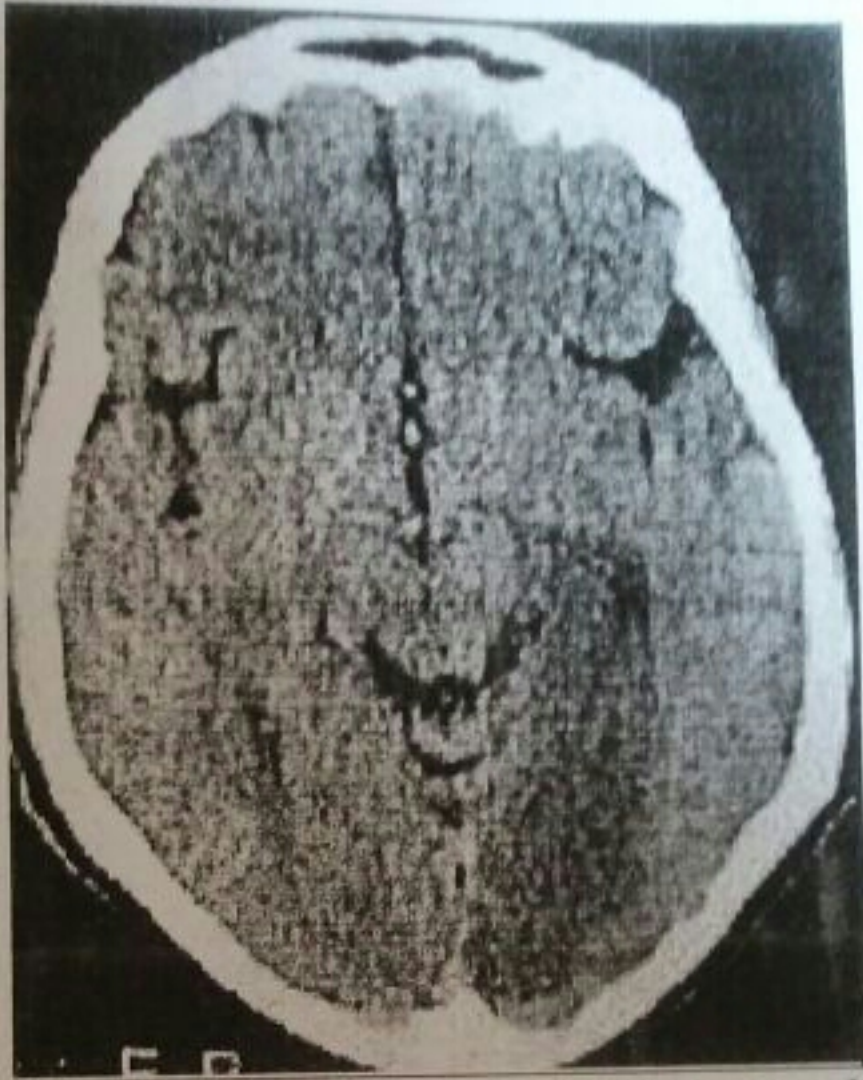
48. A 19-year-old man with insulin-dependent diabetes mellitus is taking 30 units of NPH insulin each morning and 15 units at night. Because of persistent morning glycosuria with some ketonuria, the evening dose is increased to 20 units. This worsens the morning glycosuria, and now moderate ketones are noted in urine. The patient complains of sweats and headaches at night. Which of the following is the *most appropriate* next step in management?

- A. Add lispro via a calculated scale to each meal
- B. Increase the evening dose of NPH insulin further
- C. Measure blood glucose levels at bedtime
- D. Add regular insulin to NPH at a ratio of 2/3 NPH to 1/3 regular
- ☒ E. Obtain blood sugar levels between 2:00 and 5:00 AM

49. A 33-year-old male receiving regular hemodialysis is noted to have plasma potassium of 6.9 mEq/L before a dialysis session. Although normally his potassium is less than 5.5 mEq/L. Which food combination from the dietary history would be *most likely* to cause the high potassium concentration?

- A. Cereal, toast, biscuits.
- B. Filter coffee, tea, boiled potatoes.
- C. Milk, butter, plain yoghurt
- D. Milk, ham, chicken.
- ☒ E. Tomato, potato crisps, banana

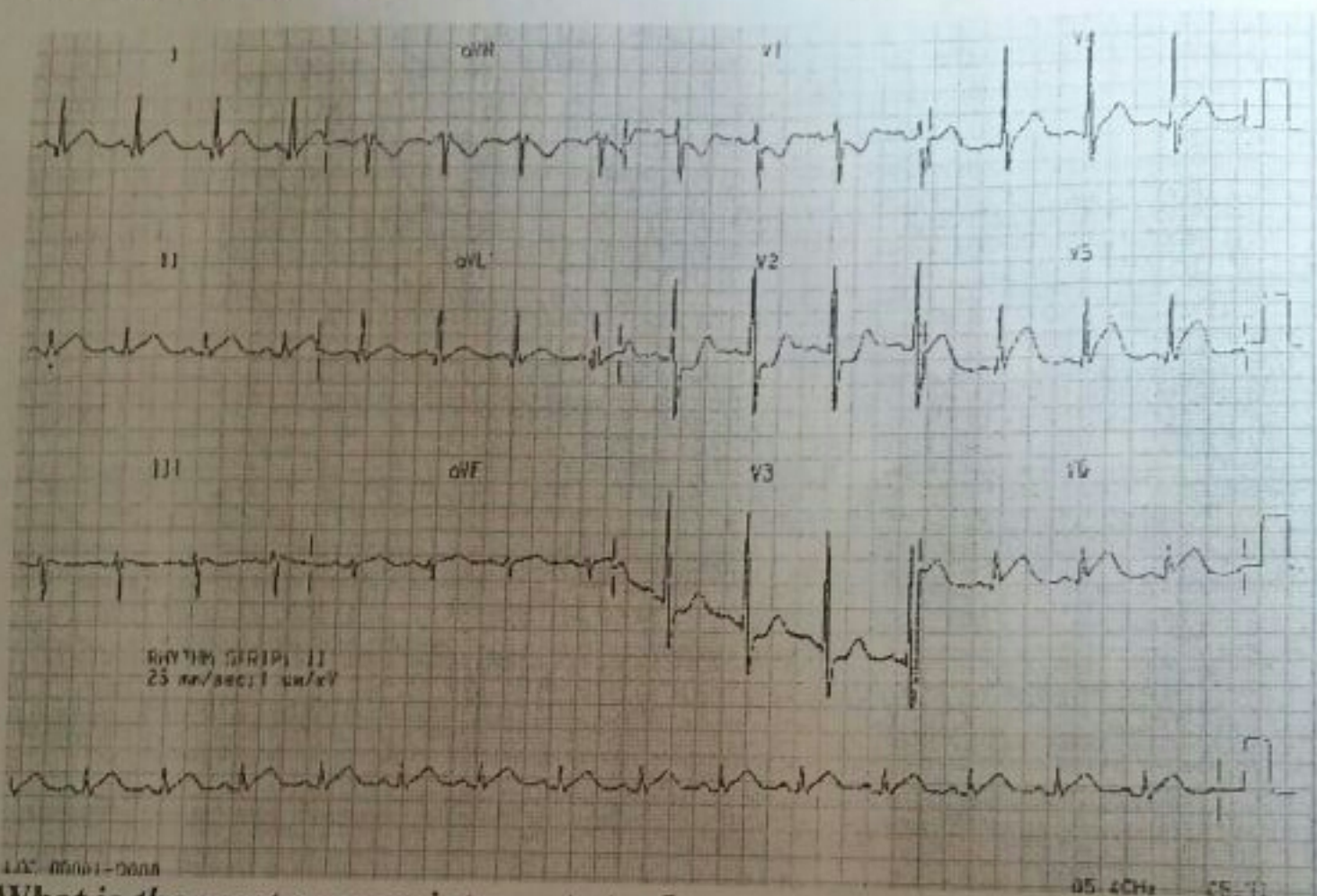
92. A 60 year old woman presented with headache and nausea. CT Brain was done as shown.



Which of the Following is a recognized feature of her condition?

- A. Cerebellar ataxia
- B. Hemiparesis
- ☒ C. Homonymous hemianopia
- D. Sixth nerve palsy
- E. Third nerve palsy

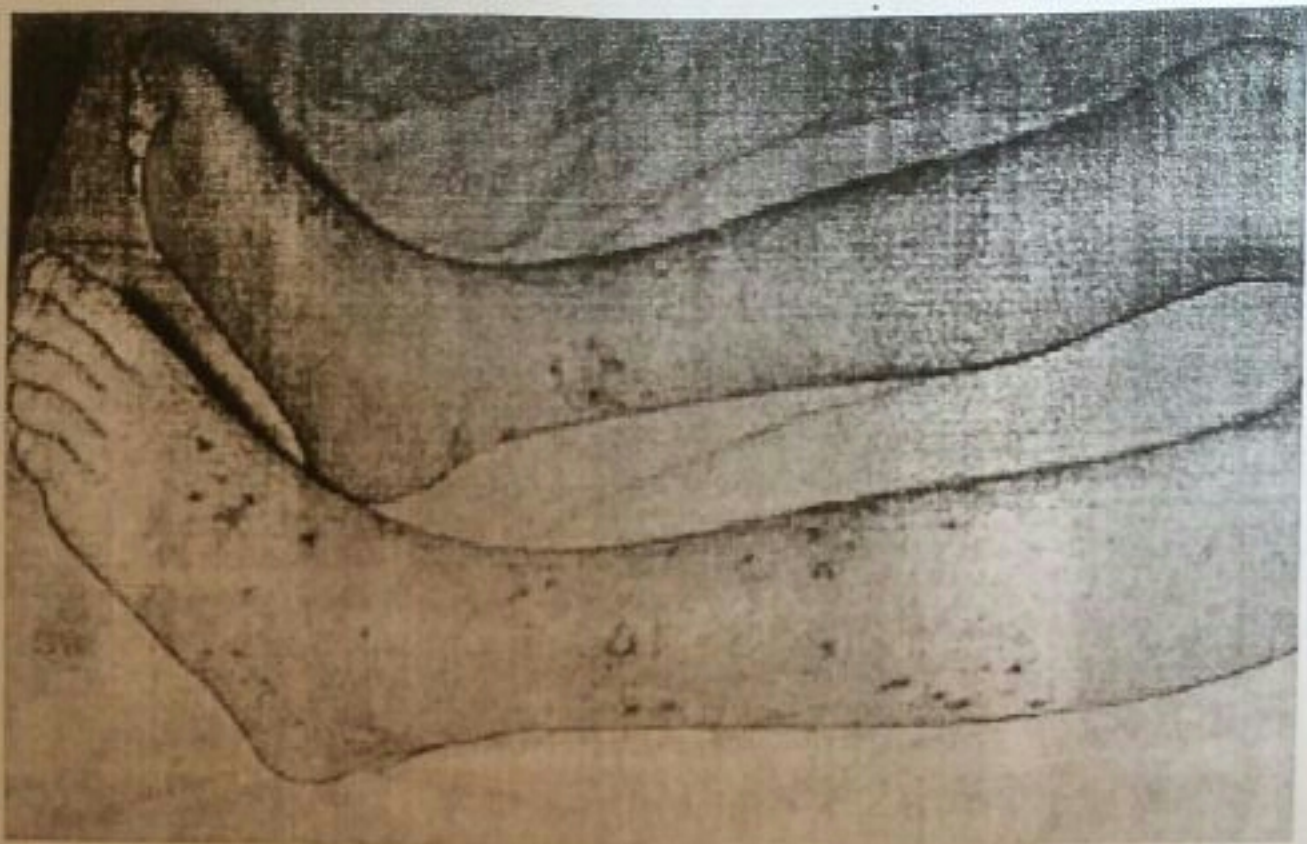
93. A 63-year-old man presented with 1 hour of heavy, central chest pain associated with shortness of breath and sweating. He has no significant past medical history. His father had angina aged 50. He is an ex-smoker of 20 cigarettes / day stopped 10 years ago. He drinks 3 units of alcohol per week. Examination reveals an obese man with a pulse of 84 bpm and BP 145/80. Chest is clear to auscultation. Heart sounds are soft with no added sounds. He was given 300 mg Aspirin in the ambulance and has also received oxygen and analgesia in the Accident and Emergency Department. His Electrocardiogram is shown.



What is the most appropriate next step?

- A. Coronary angiography
- B. Low-molecular weight heparin
- C. Non-steroidal anti-inflammatory drugs
- D. Observation
- ☒ E. Thrombolysis

86. This patient was brought in to ER feverish and unresponsive with history of headache of 3 days duration.



Which of the following is the *most appropriate* initial step in management?

- A. Blood cultures
- B. CT head scan
- C. Full blood count
- D. Intravenous ceftriaxone
- ☒ E. Lumbar puncture

87. A 40 year old man who usually drinks only 2 units of alcohol a day went on an alcohol binge with his friends. On that day, he vomited 10 times and was brought to hospital feeling very unwell. He has not previously had any symptoms of dyspepsia or abdominal pains. During physical assessment, he vomits a large bowlful of blood.



What is the likely cause of his hematemesis?

- A. Duodenal ulcer
- B. Esophageal varices
- C. Gastric outlet obstruction
- D. Gastritis
- ☒ E. Mallory Weiss tear

82. A 40 year-old woman presented with a five year history of weight gain associated with a one year history of amenorrhea. On examination, she had a BMI of 34 kg/m^2 , a pulse was 85 beats per minute, and a blood pressure of 155/100 mmHg. Which of the following would be the most useful initial investigation?

- ☒ A. 24 hour urinary free cortisol concentration
- B. 9 a.m. ACTH and serum cortisol concentration
- C. High dose dexamethasone suppression test
- D. MRI of the adrenal glands
- E. Serum sodium and potassium concentrations

83. A 60-year-old man complains of easy fatigability and palpitations for the past 6 months. Physical examination is remarkable for pallor of skin and mucous membranes. No evidence of cardiac or respiratory disease is found. Hematologic studies show: Hemoglobin 8.4 g/dL, Mean corpuscular volume (MCV) 75 fl, Leukocyte count 9000/mm³, Platelet count 380,000/mm³. Serum chemistry studies show a ferritin of 25 (N: 30–400 ng/mL) and serum bilirubin within normal values. Peripheral blood smear shows small erythrocytes with marked variability in size. Which of the following is the *most appropriate next step* in management?

- A. Bone marrow biopsy
- B. Coombs test for anti-red blood cell antibodies
- C. Hemoglobin electrophoresis
- ☒ D. Test for occult blood in the stool
- E. Therapeutic trial with oral ferrous sulfate

84. A 47-year-old woman presenting to the ER with breathlessness has her arterial blood gases taken which give the following results:

- pO_2 66 mmHg
- pCO_2 33 mmHg
- PH 7.46
- HCO_3 24 mmol/L

Which of the following is *most likely* the diagnosis?

- ☒ A. Acute severe asthma
- B. Emphysema
- ☒ C. Hyperventilation syndrome
- D. Kyphoscoliosis
- E. Opiate overdose

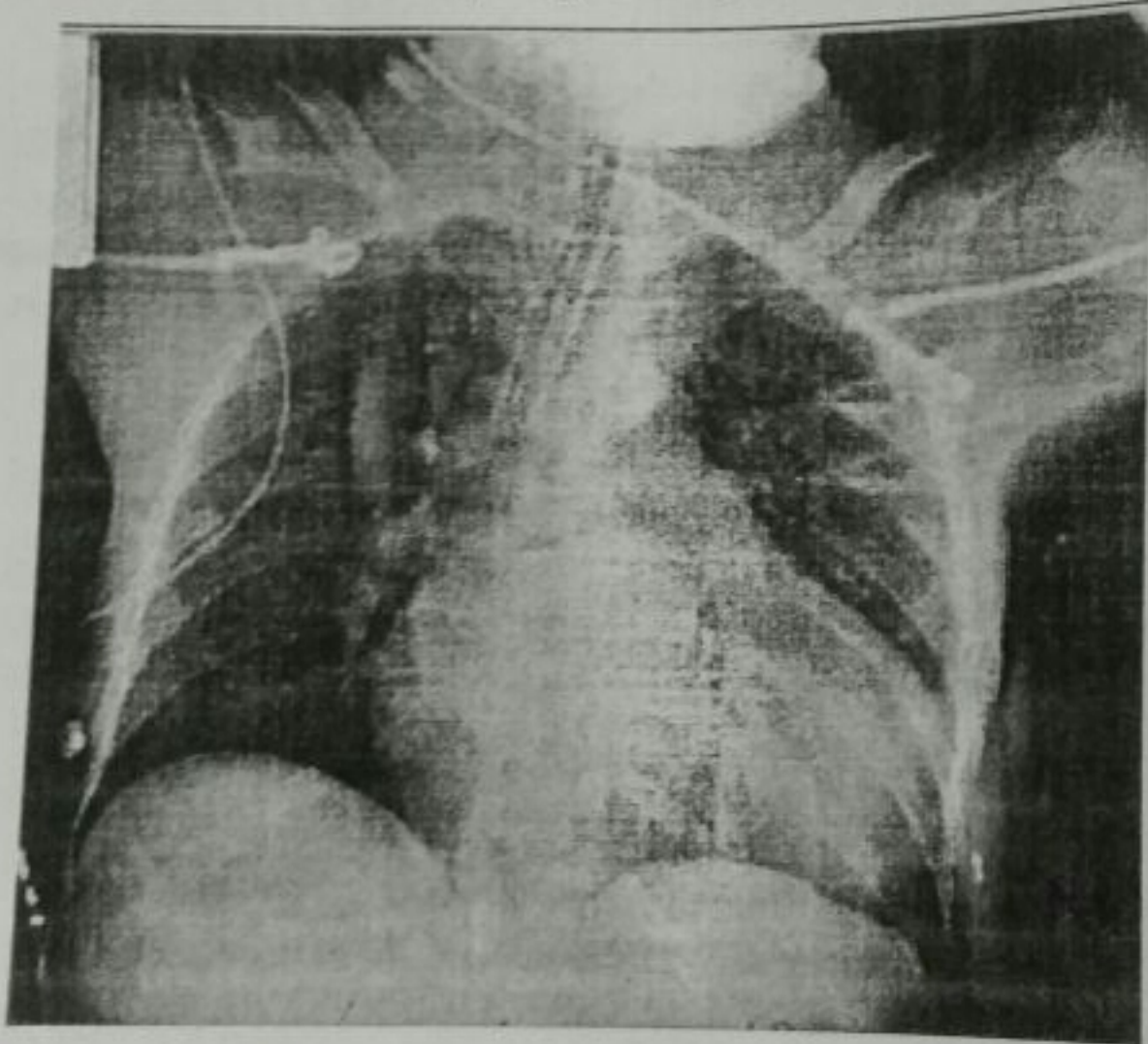
67. A 45 year old lady has numbness in the right little finger and aspect of the palm shown in the picture. The small muscles of the hand are weak.



Which nerve is affected?

- A. Anterior interosseous nerve
 - B. Median nerve
 - C. Posterior interosseous nerve
 - D. Radial nerve
 - ☒ E. Ulnar nerve
68. A 40-year-old man with HIV presents with fever, dry cough, weight loss and exertional dyspnoea. What is the possible cause for his condition?
- A. Chlamydia psittaci
 - B. Legionella pneumophila
 - C. Mycoplasma pneumonia
 - ☒ D. Pneumocystis Jiroveci
 - E. Staphylococcus aureus
69. A 55-year-old man who has a 25 year back history of smoking presents with productive cough with mucoid sputum of 2 years duration. On examination he has scattered rhonchi and wheezing. Which of the following is the most likely the diagnosis?
- A. Bronchial Asthma
 - B. Bronchiectasis
 - ☒ C. Chronic Bronchitis
 - D. Fibrosing Alveolitis
 - E. Pneumonitis

44. A 43-year-old woman presents with chest pain, shortness of breath, and worsening fatigue for the past day. The chest pain initially worsened with lying down and improved with leaning forward, but now it seems equal in intensity over all positions. On physical examination she has labored, fast breathing and appears to be in pain. She has jugular venous distention. Her temperature is 39.0°C , pulse is 126/min, blood pressure is 89/66 mm Hg, respiratory rate is 32/min, and oxygen saturation is 98% on room air. She has distant heart sounds with a friction rub. Her lungs are clear to auscultation bilaterally, her abdominal examination is free, and she has no peripheral edema. X-ray of the chest is shown. Which of the following is the most likely diagnosis?



- A. Cardiac tamponade
- B. Decompensated congestive heart failure
- C. Panic attack
- ☒ D. Pericarditis
- E. Tension pneumothorax

45. A 20-year-old male student is assessed for shortness of breath that occurs during running. He has no other symptoms and does not smoke. Physical examination, full blood count, and chest X-ray are normal. Which of the following is most likely to be helpful in confirming the suspected diagnosis?

- A. Arterial blood gas studies before and after exercise
- B. Determination of lung volumes and diffusing capacity
- C. Measurement of venous blood lactate before and after exercise
- D. Spirometry before and after administration of bronchodilators
- ☒ E. Spirometry before and after exercise

46. A 28 year old intravenous drug user complains about severe epigastric pains, nausea and vomiting. He has upper GI endoscopy which shows small areas of ulceration and white plaques.



Which of the following is the *best treatment option*?

- A. Acyclovir
- B. Amoxicillin
- ☒ C. Fluconazole
- D. Metronidazole
- E. Ranitidine

42. A patient with a bacterial infection requires intravenous antibiotic therapy. The chosen drug has a clearance (Cl) of 70 mL/min. The apparent volume of distribution (Vd) is 50 L. The plan is to administer the drug intravenously every 6 h and achieve a 4-mg/L steady-state blood level of the drug. No loading dose strategy is to be used. Which of the following maintenance doses is needed to achieve this?

N.B: $\text{Dose} = \text{Cl} \times \text{CSS}$

Ss: steady state

- A. 14 mg
- B. 24 mg
- C. 100 mg
- D. 300 mg
- E. 1200 mg



43. A 32-year-old man comes for routine evaluation. He has no symptoms but has noticed some new "nodules" on his legs. Physical examination reveals lumps on his Achillis tendon, yellow lesions around his eyes; and pigmentation of his iris. Which of the following is the *most likely* diagnosis?

- A. An inherited defect of glycogen
- B. Chronic renal disease
- C. Diabetes mellitus
- ☒ D. Familial hyperlipidemia
- E. Myxedema

37. A 19-year-old man is found to have a decreased eosinophil count. Which of the following is the most likely cause?

- A. Asthma
- B. Contact dermatitis
- C. Mycobacterial infection
- ☒ D. Prednisone administration
- E. Systemic fungal infection

38. A 16 year old boy presents to the ER with a three week history of polydipsia and polyuria, visual disturbance and lethargy. His serum glucose is 540 mg/dl and dipstick urinalysis is positive for ketones. An arterial blood gas reveals a pH of 7.24. Which one of the following is the *most likely* metabolic process occurring in this boy?

- A. Increased glucose uptake
- ☒ B. Increased glycogenesis
- C. Increased lipogenesis
- D. Increased protein catabolism
- E. Increased uptake of amino acids

39. A 54 year old woman with a long term history of asthma presents to the respiratory outpatient clinic with a history of recurrent attacks of asthma over the last year. She has received multiple courses of corticosteroids from her general practitioner and has not been steroid free for the last four months. Which one of the following effects is likely to have resulted from her therapy?

- A. An increase in intracellular phosphorus
- B. An increase in the number of circulating lymphocytes
- C. Decreased urinary calcium
- ☒ D. Increased secretion of hydrochloric acid and pepsin
- E. Reduced protein catabolism

40. A 50-year-old man developed acute pain of his left toe on the second postoperative day following an elective inguinal hernia repair. He was on a diuretic for hypertension. On examination his temperature was 38°C . Joint aspiration was done.



What is the expected result?

- A. Hemo-arthritis and raised leukocytic count
- ☒ B. Needle shaped negatively birefringent crystals
- C. Normal cell count with reduced glucose level
- D. Pus cells and positive culture for *Staph aureus*
- E. Rhomboid shaped positively birefringent crystals

41. A 23 year old man with type 1 diabetes is brought in to casualty fitting. He has been unwell with diarrhea and vomiting for a few days and has been off his food, but he has continued to take his insulin. His glucose level on admission is 36mg/dl . Which of the following is the most true regarding his current physiological state:

- A. Growth hormone secretion will be inhibited
- ☒ B. Glucagon secretion will be increased
- C. There will be decreased adrenaline secretion
- D. There will be decreased cortisol secretion
- E. TSH secretion will be decreased

33. A 28-year-old woman is receiving drug therapy for essential hypertension. She subsequently becomes pregnant. We realize that the drug she's been taking for her high blood pressure can have serious, if not fatal, effects on the fetus (it is in pregnancy category X). Which of the following drugs she is most likely on?

- A. α -Methyldopa
- ☒ B. Captopril
- C. Furosemide
- D. Labetalol
- E. Verapamil

34. A 41-year-old female presents with recurrent severe headaches and increasing visual problems. Physical examination reveals her blood pressure to be 220/150. Her symptoms are most likely to be associated with:

- A. Arteriosclerosis obliterans
- B. Hyaline arteriolosclerosis
- C. Hyperplastic arteriolosclerosis
- D. Medial calcific sclerosis
- E. Thromboangiitis obliterans

35. A 75-year-old patient presents to the ER after a syncopal episode. He is again alert and retrospectively describes occasional substernal chest pressure and shortness of breath on exertion. His blood pressure is 110/80 and lungs have a few basal crepitations. Which auscultatory finding would best explain his findings?

- A. A diastolic murmur heard at the mid-left sternal border
- ☒ B. A systolic murmur heard at the upper right sternal border
- C. A holosystolic murmur heard best at the apex
- D. A midsystolic click heard best at the apex
- E. A pericardial rub heard all over the precordium

36. A man goes on a hunger strike and confines himself to a liquid diet with minimal calories. Which of the following would occur after 4 to 5 h?

- A. Decreased Ca^{++} in muscle and decreased glycogenolysis
- B. Decreased cyclic AMP and increased liver glycogen synthesis
- C. Decreased epinephrine levels and increased liver glycogenolysis
- D. Increased Ca^{++} in muscle and decreased glycogenolysis
- ☒ E. Increased cyclic AMP and increased liver glycogenolysis

30. A 30-year-old woman presented with hypertension (160/110 mmHg), elevated titres of antibodies to double-stranded DNA, and proteinuria (1 g per 24 hours). A renal biopsy demonstrated WHO class II lupus nephritis (mesangial disease). What is the most appropriate single treatment for this patient?

- ☒ A. Antihypertensive medication
- B. High-dose corticosteroids
- C. Intravenous cyclophosphamide
- D. Oral cyclophosphamide
- E. Plasma exchange

31. A 58-year-old man with a lung lesion develops hyponatremia (Na 127 mEq/L). He appears euvolemic clinically and urine electrolytes reveal a high Na (> 20 mmol/L) and high osmolality. Which of the following is the most likely mechanism for the low serum sodium?

- ☒ A. Active reabsorption of water from the loop of henle
- B. Decreased glomerular filtration rate
- C. Increased permeability of the distal renal tubule to water
- D. Increased permeability of the proximal renal tubule to water
- E. Increased sodium excretion

32. A 57-year-old obese, diabetic man is admitted for the sudden onset of shortness of breath with a clear lung examination. The blood gas shows a pO_2 of 72 mm Hg and a markedly elevated Alveolar-arterial gradient on room air. The chest x-ray is normal. He is started on intravenous heparin and six hours later develops black stool and tachycardia. What is best therapy for this patient?

- A. Inferior vena cava filter placement
- B. Embolectomy
- C. Switch to low-molecular-weight heparin
- D. Switch to coumadin
- E. Intravenous proton-pump inhibitors

27. A 32-year-old man is seen in the outpatient clinic, His Bp 170/100. Investigations: creatinine 1.8 mg% and urine analysis was free. Ultrasound scan of both kidneys revealed right kidney of 8.5 cm and left kidney of 13 cm. What is the *best investigation* to diagnose his condition?

- A. Intravenous urogram
- B. Isotope renogram
- ☒ C. Renal angiogram
- D. Renal biopsy
- E. Retrograde pyelogram

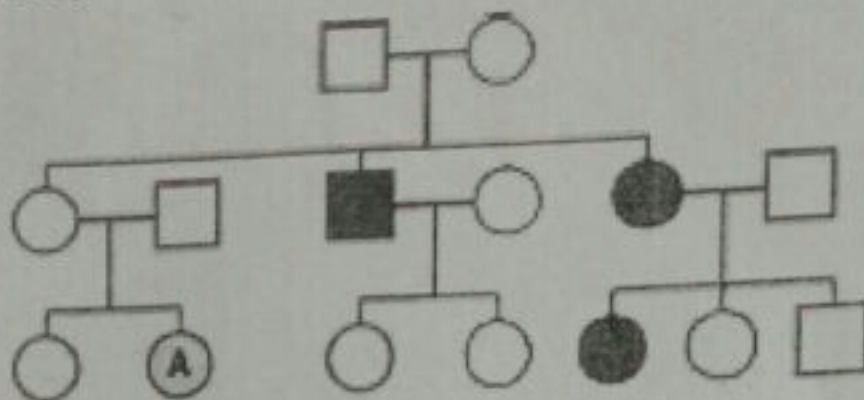
28. A 72-year-old man is prescribed hydrochlorothiazide for hypertension. Which of the following is the most likely symptomatic side effect?

- A. Hypernatremia
- B. Increased serum potassium
- ☒ C. Metabolic acidosis
- D. Respiratory alkalosis
- ☒ E. Sexual impotence

29. A 70-year-old patient with chronic obstructive lung disease requires 2 L/min of nasal O₂ to treat his hypoxia, which is sometimes associated with angina. The patient develops pleuritic chest pain, fever, and purulent sputum. While using his oxygen at an increased flow of 5 L/min he becomes stuporous and develops a respiratory acidosis with CO₂ retention and worsening hypoxia. What would be the most appropriate next step in the management of this patient?

- A. Begin medroxyprogesterone.
- B. Begin sodium bicarbonate.
- ☒ C. Intubate and begin mechanical ventilation.
- D. Observe patient 24 hours before changing therapy.
- E. Stop oxygen.

22. The genetic tree shown is that of a family in which there is a history of cystic fibrosis. Assuming that the gene frequency in the general population is $1/20$,



KEY:

- ☒ ☒ Affected
☐ ☐ Unaffected
☐ ☐ Not tested



What is the chance of individual 'A' having the disease?

- A. $1/20$
- B. $1/80$
- C. $1/120$
- D. $1/160$
- E. $1/320$

23. A 42-year-old man with known valvular heart disease develops a fever for 1 week. He appears unwell; findings include a pansystolic murmur at the apex that radiates to the axilla and a soft S1 sound. He has petechiae on his conjunctiva, linear hemorrhages under a few fingernails, along with painful, tender, and erythematous nodules on some of the distal fingertips. Which of the following is the most responsible mechanism for these physical findings?

- A. Direct bacterial invasion
- B. Immune response
- C. Preexisting cardiac dysfunction
- D. Valvular damage
- ☒ E. Vascular phenomena

24. A 30-year-old man has abdominal trauma from 3 weeks during which he received antibiotics and total parental nutrition. Multiple bruises and ecchymosis all over his body appeared. He has never been on medications prior to this admission. On physical examination, his vital signs are stable. INR is 4. His platelet count is 50,000. Which of the following is the most likely cause of his easy bruising?

- A. DIC
- ☒ B. Hepatic injury
- C. ITP
- D. Sepsis
- E. Vit. K deficiency

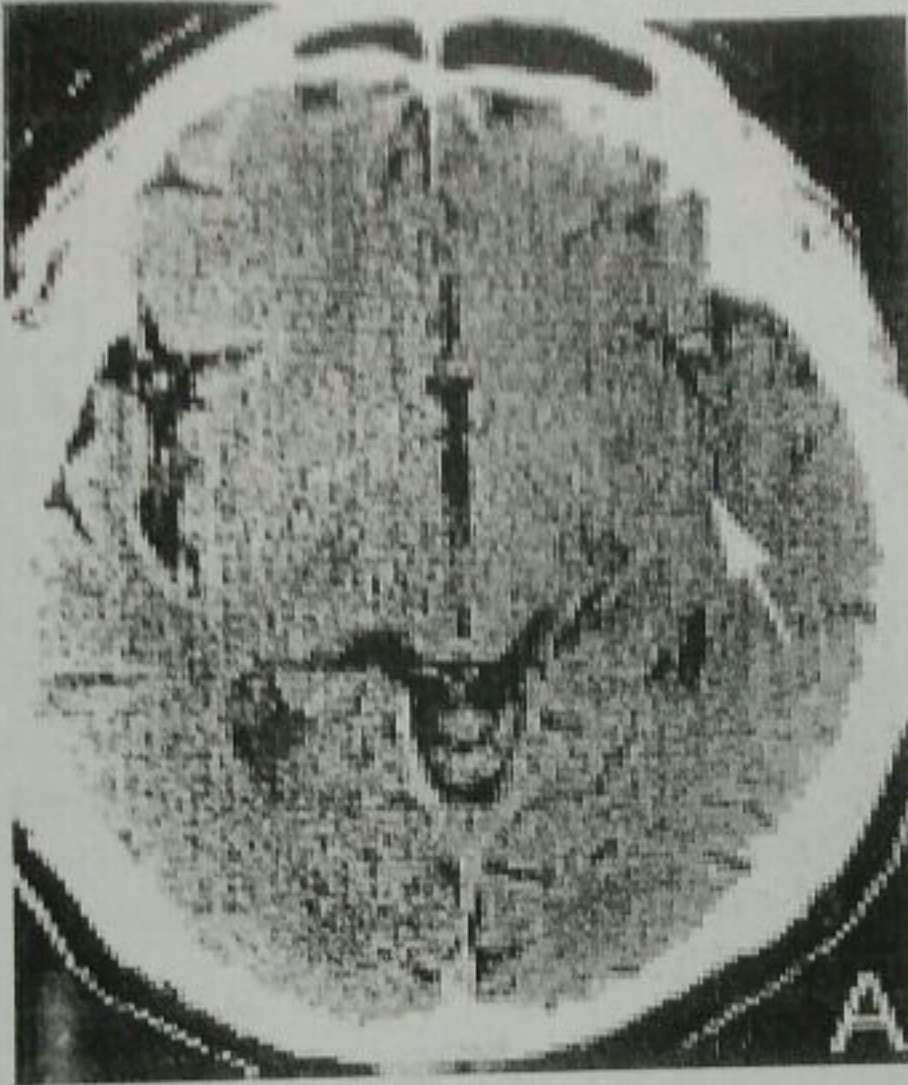
25. A 55-year-old man is brought to the emergency department by the police after being found wandering and incoherent to himself. The initial impression is of an emaciated, jaundiced, and confused. The breath has a musty, sweet odor. Abdominal examination shows ascites and marked nodularity of the liver edge. Neurologic examination is notable for asterixis. A toxicology screen is negative. Which of the following is the most appropriate pharmacotherapy?

- ☒ A. Neomycin
- B. Rifuxamin
- C. Silymarin
- D. Spironolactone
- E. Ursodeoxycolic acid

26. A 56-year-old woman with a history of heart failure secondary to ischaemic dilated cardiomyopathy. Currently, she is taking a maximal dose of *lisinopril* and *carvedilol*. However, she gained 3 kg weight and has increased shortness of breath. On examination: her heart rate is 78/min and her blood pressure is 110/80 mm Hg. mild jugulovenous distension, and there is no peripheral edema. ECG shows normal sinus rhythm and nonspecific ST changes. Which of the following is the most appropriate next step in the management of this patient?

- A. Decrease the dose of carvedilol
- B. Initiate therapy with digoxin
- C. Refer for transplantation evaluation
- ☒ D. Start furosemide
- E. Stop carvedilol

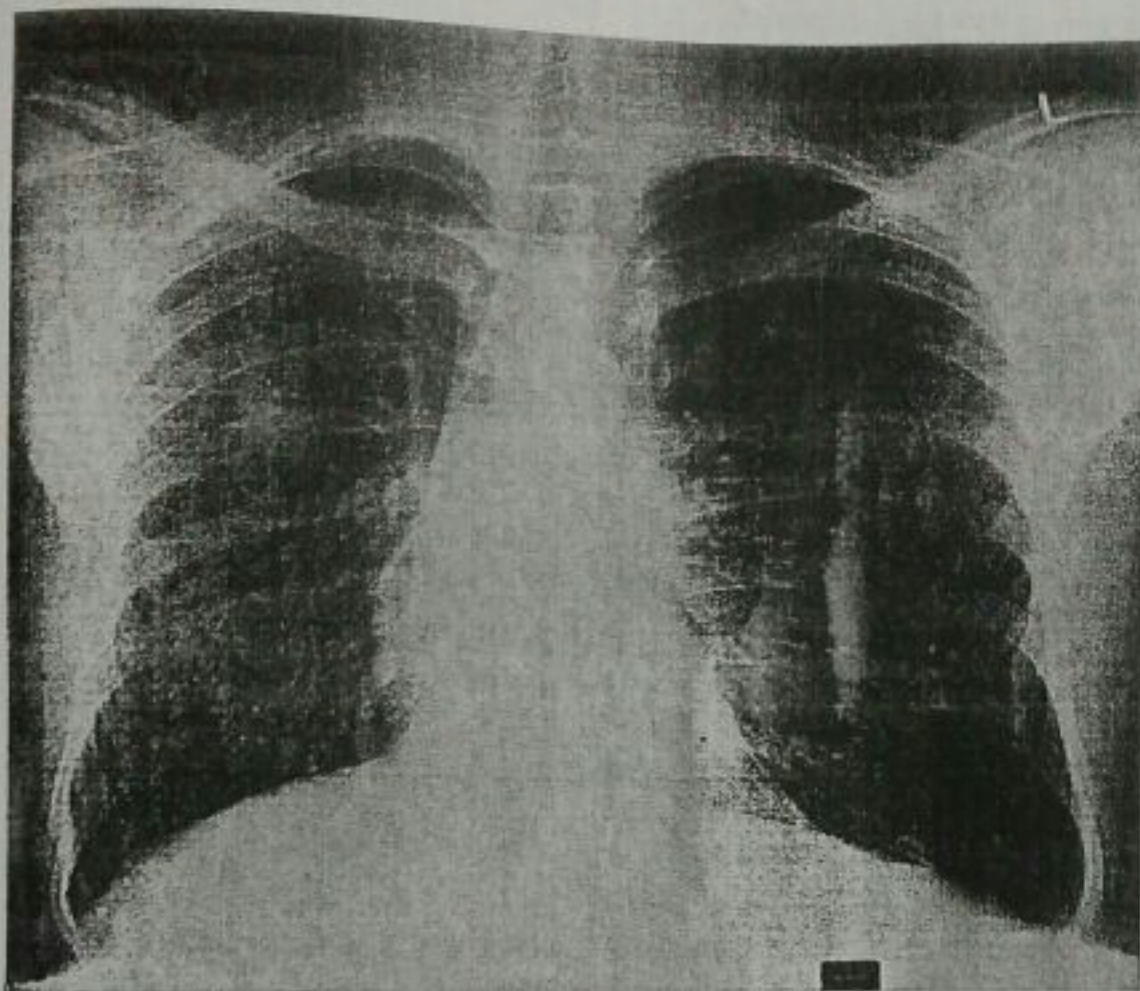
21. A 65-year-old man presents with new-onset aphasia and left-sided homonymous hemianopsia. Results of CT of the head are shown in the image.



Which vascular territory is involved?

- A. Anterior cerebral artery
- B. Basilar artery
- C. Lacunar territories
- ☒ D. Middle cerebral artery
- E. Posterior cerebral artery

13. A 19-year-old man presented with pleuritic chest pain which occurred suddenly while playing football. He presented to the emergency department complaining of dyspnea. His chest x ray is shown.



Which of the following would be the definitive treatment for this condition?

- A. High-flow inspired oxygen
- B. Intercostal chest drain insertion
- C. Intravenous amoxicillin + clarithromycin
- D. Low molecular weight heparin
- E. Nebulized salbutamol

4. A 26-year-old man attends for a tooth extraction. He reports prolonged bleeding after a tooth extraction 2 years previously. He has had no other history of prolonged bleeding. He is otherwise fit and well. On further questioning he said his mother had recently been referred for recurrent nose bleeds and menorrhagia. He was also aware that his sister had been seen in the past for menorrhagia. The dental extraction cannot be delayed. What should the dentist be advised to give the patient to reduce the risk of significant bleeding?

- A. Cryoprecipitate
- B. Factor VIII replacement
- C. Fresh frozen plasma
- D. Tranexamic acid
- E. von Willebrand Factor concentrate

5. A 72-year-old male diabetic presents with weakness and lethargy. He was diagnosed with type 2 diabetes mellitus 12 years ago and remains on gliclazide and metformin therapy and takes atenolol for hypertension. He has loss of pin prick and vibration sensation to the ankle in both legs and a background diabetic retinopathy.

Blood pressure	165/90 mmHg lying and standing
Serum sodium	135 mEq/l
serum potassium	5.7 mEq/l
Urea	60mg/dl
Serum creatinine	2.5 mg/dl
Plasma glucose	190mg/dl
HbA1c	7.8%
pH	7.29

What is the likely cause for these electrolyte abnormalities?

- A. Acute renal failure
- B. Addison's disease
- C. Hyporeninemic hypoaldosteronism
- D. Liddle's syndrome
- E. Proximal renal tubular acidosis

6. A 28-year-old lady presents with a three day history of a painful swollen right calf. Her coagulation screen shows:

Prothrombin time	13 s	(11.5-15.5)
Thrombin time	13 s	(13)
Activated partial thromboplastin time	78 s	(30-40)

The APTT was not corrected when mixed with normal plasma. What is the cause of the clotting abnormality?

- A. Chronic liver disease
- B. Disseminated intravascular coagulation
- C. Hemophilia
- ☒ D. Lupus anticoagulant
- E. von Willebrand disease

7. A 45-year-old woman was admitted to hospital with difficulty breathing. She was admitted from a local restaurant after becoming suddenly unwell while eating curry. On arrival in casualty, her face and lips were noted to be grossly swollen and there was an audible inspiratory wheeze. There was no past history of allergies. She had been diagnosed with hypertension by her GP and started on captopril ten days previously. Investigations showed:

Serum IgE	>1000 KU/L	(<120)
Mast cell tryptase	Normal after 30 minutes	

What is the *most likely* cause of this reaction?

- A. C1 inhibitor deficiency
- B. Captopril-induced angioedema
- C. Hyperimmunoglobulinemia E
- D. Mastocytosis
- ☒ E. Nut allergy

8. A 45-year-old woman presents with pruritis. On examination she has excoriations, palmar erythema and spider naevi. There is also evidence of xanthelasma. Blood results demonstrate deranged liver function tests with a predominantly cholestatic picture but the abdominal ultrasound scan is normal. A subsequent autoimmune screen is positive for anti-mitochondrial antibodies. Which of the following HLA antigens is associated with this disease?

- A. HLA-A3
- B. HLA-B27
- C. HLA-B35
- D. HLA-B5
- ☒ E. HLA-DR8

85. A diagnosis of diabetes mellitus being considered in 30 year old woman who is 12 weeks pregnant. Her body mass index (BMI) was 20 kg/m². A 75g oral glucose tolerance test shows the following results:

Time	Plasma glucose concentration
0 hour	99 mg/dl
2 hour	210 mg/dl

Which of the following is the *most appropriate next step* in the patient's management?

- A. Diet control
- B. Gliclazide therapy
- C. Metformin therapy
- D. Repeat OGTT in 4 weeks
- E. Subcutaneous insulin