

Chapter 24: Mock 1 Examinations

Mock Exam 1: 100 Questions with Detailed Answer Explanations

Question 1

A 45-year-old man presents with central chest pain radiating to his left arm and jaw. The pain started 2 hours ago and is described as crushing. His ECG shows ST elevation in leads II, III, and aVF. What is the most likely diagnosis?

- A) Anterior STEMI
- B) Inferior STEMI
- C) Lateral STEMI
- D) Posterior STEMI
- E) Unstable angina

Answer: B) Inferior STEMI

Explanation: ST elevation in leads II, III, and aVF indicates an inferior ST-elevation myocardial infarction (STEMI). These leads look at the inferior wall of the left ventricle, which is typically supplied by the right coronary artery. The clinical presentation of crushing central chest pain radiating to the arm and jaw is classic for myocardial infarction. Anterior STEMI would show changes in V1-V6, lateral STEMI in I, aVL, V5-V6, and posterior STEMI in V7-V9 or reciprocal changes in V1-V3.

Question 2

A 28-year-old woman presents with a 3-day history of dysuria, urinary frequency, and suprapubic pain. She is otherwise well with no fever. Urine dipstick shows nitrites positive, leucocytes positive. What is the most appropriate first-line antibiotic treatment?

- A) Amoxicillin 500mg TDS for 7 days
- B) Trimethoprim 200mg BD for 3 days
- C) Ciprofloxacin 500mg BD for 7 days
- D) Nitrofurantoin 50mg QDS for 3 days
- E) Co-amoxiclav 625mg TDS for 7 days

Answer: B) Trimethoprim 200mg BD for 3 days

Explanation: This is a classic presentation of uncomplicated urinary tract infection in a young woman. According to NICE guidelines, first-line treatment for uncomplicated UTI is trimethoprim 200mg twice daily for 3 days (if local resistance <20%) or nitrofurantoin 50mg four times daily for 3 days. Trimethoprim is preferred due to better compliance with twice-daily dosing. The 3-day course is appropriate for uncomplicated cystitis in women.

Question 3

A 65-year-old man with type 2 diabetes presents for routine review. His HbA1c is 75 mmol/mol (9.0%) despite maximum tolerated metformin. His eGFR is 45 ml/min/1.73m². What is the most appropriate next step?

- A) Add gliclazide
- B) Add sitagliptin
- C) Add empagliflozin
- D) Start insulin
- E) Add pioglitazone

Answer: C) Add empagliflozin

Explanation: With an eGFR of 45 ml/min/1.73m², this patient has moderate CKD (stage 3b). SGLT2 inhibitors like empagliflozin are preferred second-line agents in diabetic patients with CKD as they provide cardiovascular and renal protection. They can be used down to eGFR 30 ml/min/1.73m². Gliclazide increases hypoglycemia risk, sitagliptin requires dose adjustment in CKD, and pioglitazone can cause fluid retention which may worsen in CKD.

Question 4

A 32-year-old pregnant woman at 36 weeks gestation presents with severe headache, visual disturbances, and epigastric pain. Her BP is 165/110 mmHg. Urine protein is 3+. What is the most likely diagnosis?

- A) Gestational hypertension
- B) Chronic hypertension
- C) Pre-eclampsia
- D) Eclampsia
- E) HELLP syndrome

Answer: C) Pre-eclampsia

Explanation: Pre-eclampsia is diagnosed by hypertension ($\geq 140/90$ mmHg) after 20 weeks gestation plus proteinuria ($\geq 1+$ on dipstick) or other maternal organ dysfunction. This patient has severe features including severe hypertension ($\geq 160/110$), visual disturbances, and epigastric pain (indicating liver involvement). Eclampsia would require seizures, HELLP syndrome needs laboratory evidence of hemolysis, elevated liver enzymes, and low platelets.

Question 5

A 70-year-old man presents with progressive shortness of breath and ankle swelling over 3 months. Examination reveals elevated JVP, bilateral crepitations, and pitting edema. His NT-proBNP is 2500 pg/ml. What is the most appropriate initial investigation?

- A) Chest X-ray
- B) Echocardiogram
- C) CT pulmonary angiogram
- D) Coronary angiography
- E) Exercise stress test

Answer: B) Echocardiogram

Explanation: This presentation suggests heart failure with elevated NT-proBNP (>400 pg/ml in patients >75 years, >125 pg/ml in younger patients). According to NICE guidelines, echocardiogram should be performed within 2 weeks for patients with suspected heart failure and elevated natriuretic peptides to assess left ventricular function and guide treatment. Chest X-ray may show pulmonary edema but doesn't assess cardiac function.

Question 6

A 25-year-old woman presents with a 2-week history of sore throat, fever, and fatigue. She has cervical lymphadenopathy and splenomegaly. Her throat swab is negative for Group A Streptococcus. What is the most likely diagnosis?

- A) Viral pharyngitis
- B) Infectious mononucleosis
- C) Bacterial pharyngitis
- D) Diphtheria
- E) Candidiasis

Answer: B) Infectious mononucleosis

Explanation: The triad of fever, sore throat, and lymphadenopathy in a young adult, combined with splenomegaly and negative streptococcal throat swab, strongly suggests infectious mononucleosis (glandular fever), most commonly caused by Epstein-Barr virus. The prolonged duration (2 weeks) and systemic symptoms differentiate it from simple viral pharyngitis. Monospot test or EBV serology would confirm the diagnosis.

Question 7

A 55-year-old man with a history of atrial fibrillation presents with sudden onset severe abdominal pain and bloody diarrhea. His CHA₂DS₂-VASc score is 3, but he stopped taking warfarin 3 months ago. What is the most likely diagnosis?

- A) Inflammatory bowel disease
- B) Ischemic colitis
- C) Mesenteric ischemia
- D) Diverticulitis
- E) Colorectal cancer

Answer: C) Mesenteric ischemia

Explanation: Sudden onset severe abdominal pain in a patient with atrial fibrillation who is not anticoagulated suggests acute mesenteric ischemia due to embolic occlusion of mesenteric vessels. The bloody diarrhea indicates bowel ischemia. This is a surgical emergency requiring immediate CT angiography and vascular surgery consultation. His CHA₂DS₂-VASc score of 3 indicates high embolic risk.

Question 8

A 40-year-old woman presents with recurrent episodes of palpitations, sweating, and tremor lasting 10-15 minutes. These occur 2-3 times per week with no obvious trigger. Physical examination and ECG during an episode are normal. What is the most likely diagnosis?

- A) Hyperthyroidism
- B) Panic disorder
- C) Cardiac arrhythmia
- D) Pheochromocytoma
- E) Caffeine excess

Answer: B) Panic disorder

Explanation: Recurrent episodes of palpitations, sweating, and tremor in a young woman with normal physical examination and ECG suggest panic disorder. Panic attacks typically last minutes, occur without obvious triggers, and are associated with autonomic symptoms. The normal ECG during an episode makes cardiac arrhythmia less likely. Hyperthyroidism would cause persistent rather than episodic symptoms.

Question 9

A 2-year-old child presents with a 3-day history of cough, wheeze, and difficulty breathing. The symptoms started gradually and the child has been feeding poorly. On examination, there are widespread fine crackles and wheeze. What is the most likely diagnosis?

- A) Asthma B) Pneumonia C) Bronchiolitis D) Croup E) Foreign body aspiration

Answer: C) Bronchiolitis

Explanation: Bronchiolitis typically affects children under 2 years, presenting with gradual onset cough, wheeze, and feeding difficulties. The widespread fine crackles and wheeze are characteristic. It's usually caused by respiratory syncytial virus (RSV). Asthma is uncommon under 2 years, pneumonia would typically have fever and focal signs, croup causes barking cough and stridor, and foreign body aspiration would have sudden onset.

Question 10

A 78-year-old man presents with confusion and falls. His wife reports he has been increasingly forgetful over the past year. MMSE score is 18/30. What is the most appropriate initial investigation?

- A) CT head B) MRI brain C) Lumbar puncture D) EEG E) PET scan

Answer: A) CT head

Explanation: In suspected dementia, NICE guidelines recommend CT head as the initial neuroimaging to exclude reversible causes such as normal pressure hydrocephalus, subdural hematoma, or brain tumor. The gradual cognitive decline with MMSE 18/30 suggests

moderate dementia. MRI may be used if CT is inconclusive or for specific indications. Blood tests to exclude reversible causes should also be performed.

Question 11

A 30-year-old woman at 32 weeks gestation presents with sudden onset severe abdominal pain and vaginal bleeding. Her uterus is tender and tense on examination. Fetal heart rate shows late decelerations. What is the most likely diagnosis?

- A) Placental abruption B) Placenta previa C) Uterine rupture D) Preterm labor E) Cervical laceration

Answer: A) Placental abruption

Explanation: Placental abruption presents with sudden severe abdominal pain, vaginal bleeding, tender tense uterus, and fetal distress (late decelerations). This is an obstetric emergency requiring immediate delivery. Placenta previa typically causes painless bleeding, uterine rupture is rare in primigravida without previous cesarean section, and preterm labor wouldn't cause such severe pain and fetal compromise.

Question 12

A 45-year-old man presents with a 2-month history of weight loss, night sweats, and painless lymph node enlargement in his neck. Lymph node biopsy shows Reed-Sternberg cells. What is the most likely diagnosis?

- A) Non-Hodgkin's lymphoma B) Hodgkin's lymphoma C) Chronic lymphocytic leukemia D) Infectious mononucleosis E) Metastatic carcinoma

Answer: B) Hodgkin's lymphoma

Explanation: Reed-Sternberg cells are pathognomonic for Hodgkin's lymphoma. The classic presentation includes painless lymphadenopathy, B symptoms (weight loss, night sweats, fever), and typically affects younger adults. The presence of Reed-Sternberg cells

distinguishes Hodgkin's from non-Hodgkin's lymphoma. Staging with CT and PET scan would be required for treatment planning.

Question 13

A 25-year-old man presents with acute severe left-sided scrotal pain and swelling that started 2 hours ago. The left testicle is high-riding and horizontally oriented. Cremasteric reflex is absent. What is the most appropriate immediate management?

- A) Antibiotics and analgesia
- B) Urgent surgical exploration
- C) Ultrasound Doppler
- D) Urine culture
- E) Bed rest and scrotal support

Answer: B) Urgent surgical exploration

Explanation: This presentation strongly suggests testicular torsion - acute severe pain, high-riding horizontally oriented testicle, and absent cremasteric reflex. Testicular torsion is a urological emergency requiring immediate surgical detorsion and orchiopexy within 6 hours to save the testicle. Waiting for imaging would delay treatment and risk testicular loss. Clinical diagnosis should prompt immediate surgical consultation.

Question 14

A 50-year-old woman presents with a 6-month history of dry eyes and dry mouth. She also complains of joint pain in her hands and fatigue. Blood tests show positive anti-Ro and anti-La antibodies. What is the most likely diagnosis?

- A) Systemic lupus erythematosus
- B) Sjögren's syndrome
- C) Rheumatoid arthritis
- D) Systemic sclerosis
- E) Polymyalgia rheumatica

Answer: B) Sjögren's syndrome

Explanation: Sjögren's syndrome is an autoimmune condition causing sicca symptoms (dry eyes and mouth) due to lacrimal and salivary gland dysfunction. The presence of anti-Ro (SSA) and anti-La (SSB) antibodies supports the diagnosis. Joint pain and fatigue are

common associated symptoms. Schirmer's test and salivary gland biopsy may be used for further evaluation.

Question 15

A 35-year-old man presents with a 1-week history of productive cough with green sputum, fever, and left-sided chest pain. Chest X-ray shows left lower lobe consolidation. What is the most appropriate antibiotic treatment?

- A) Amoxicillin 500mg TDS for 5 days
- B) Clarithromycin 500mg BD for 7 days
- C) Doxycycline 100mg BD for 5 days
- D) Co-amoxiclav 625mg TDS for 7 days
- E) Ciprofloxacin 500mg BD for 7 days

Answer: A) Amoxicillin 500mg TDS for 5 days

Explanation: This is community-acquired pneumonia of moderate severity (CRB-65 likely 0-1). According to BTS/NICE guidelines, first-line treatment for non-severe community-acquired pneumonia is amoxicillin 500mg three times daily for 5 days. If atypical organisms are suspected or penicillin allergy exists, clarithromycin or doxycycline would be alternatives. The 5-day course is evidence-based for community-acquired pneumonia.

Question 16

A 65-year-old woman presents with gradual onset hearing loss and tinnitus in her left ear over 6 months. Weber test lateralizes to the right ear. Rinne test is positive bilaterally. What type of hearing loss is this?

- A) Conductive hearing loss
- B) Sensorineural hearing loss
- C) Mixed hearing loss
- D) Functional hearing loss
- E) Normal hearing

Answer: B) Sensorineural hearing loss

Explanation: Weber test lateralizing away from the affected ear (to the right) and positive Rinne test bilaterally (air conduction > bone conduction) indicates sensorineural hearing loss in the left ear. This could be due to presbycusis, acoustic neuroma, or sudden sensorineural

hearing loss. Further investigation with pure tone audiometry and possible MRI would be indicated for unilateral sensorineural hearing loss.

Question 17

A 28-year-old woman presents with a 3-day history of severe headache, neck stiffness, and photophobia. She has a petechial rash on her legs. Her temperature is 38.5°C. What is the most appropriate immediate management?

- A) CT head
- B) Lumbar puncture
- C) Blood cultures and IV antibiotics
- D) Oral antibiotics
- E) Viral PCR

Answer: C) Blood cultures and IV antibiotics

Explanation: This presentation strongly suggests bacterial meningitis with the classic triad of headache, neck stiffness, and fever, plus a petechial rash suggesting meningococcal disease. In suspected bacterial meningitis, antibiotics should be given immediately after blood cultures - don't delay for lumbar puncture or CT. IV ceftriaxone or benzylpenicillin should be started urgently as bacterial meningitis is life-threatening.

Question 18

A 60-year-old man with COPD presents with increasing breathlessness, purulent sputum, and wheeze over 3 days. His usual medications are salbutamol and tiotropium inhalers. What is the most appropriate additional treatment?

- A) Increase bronchodilator dose
- B) Oral prednisolone
- C) Antibiotics only
- D) Oral prednisolone and antibiotics
- E) IV aminophylline

Answer: D) Oral prednisolone and antibiotics

Explanation: This represents an acute exacerbation of COPD with increased breathlessness, purulent sputum (indicating bacterial infection), and wheeze. According to NICE guidelines, treatment should include both oral prednisolone (30mg daily for 5 days) and antibiotics

(amoxicillin, clarithromycin, or doxycycline). Both therapies together reduce recovery time and risk of treatment failure in moderate to severe exacerbations.

Question 19

A 22-year-old woman presents with a 2-week history of palpitations, weight loss, heat intolerance, and tremor. On examination, she has a smooth goiter and eye signs including lid lag. TSH is <0.01 mU/L, free T4 is elevated. What is the most likely diagnosis?

- A) Toxic multinodular goiter
- B) Graves' disease
- C) Thyroiditis
- D) Toxic adenoma
- E) Factitious hyperthyroidism

Answer: B) Graves' disease

Explanation: Graves' disease is the most common cause of hyperthyroidism in young women, presenting with classic symptoms plus smooth goiter and eye signs (Graves' orbitopathy). The presence of eye signs strongly suggests Graves' disease rather than other causes of hyperthyroidism. TSH receptor antibodies (TRAb) would be positive. Treatment options include antithyroid drugs, radioiodine, or surgery.

Question 20

A 75-year-old man presents with sudden onset weakness of his right arm and leg, and speech difficulties that started 1 hour ago. His NIHSS score is 8. CT head shows no hemorrhage. What is the most appropriate treatment?

- A) Aspirin 300mg
- B) Alteplase (tPA)
- C) Clopidogrel 75mg
- D) Heparin
- E) Warfarin

Answer: B) Alteplase (tPA)

Explanation: This patient presents with acute ischemic stroke within the therapeutic window (<4.5 hours from onset). With NIHSS 8 (moderate severity) and no contraindications on CT, he is eligible for thrombolysis with alteplase. This significantly improves outcomes when given within 4.5 hours of symptom onset. Aspirin should be given after thrombolysis or if thrombolysis is contraindicated.

Question 21

A 3-year-old child presents with a barking cough, inspiratory stridor, and hoarse voice. The symptoms are worse at night. The child is alert and playful. What is the most likely diagnosis?

- A) Epiglottitis B) Croup C) Bronchiolitis D) Pneumonia E) Foreign body aspiration

Answer: B) Croup

Explanation: Croup (laryngotracheobronchitis) typically affects children aged 1-6 years, presenting with the classic triad of barking cough, inspiratory stridor, and hoarse voice. Symptoms are characteristically worse at night. The child being alert and playful suggests mild croup. Treatment includes oral dexamethasone. Epiglottitis would cause more severe systemic illness and drooling.

Question 22

A 45-year-old woman presents with a 3-month history of abdominal pain, bloating, and alternating diarrhea and constipation. Colonoscopy and inflammatory markers are normal. What is the most likely diagnosis?

- A) Inflammatory bowel disease B) Irritable bowel syndrome C) Colorectal cancer D) Celiac disease E) Thyroid dysfunction

Answer: B) Irritable bowel syndrome

Explanation: This presentation meets Rome IV criteria for irritable bowel syndrome (IBS) - recurrent abdominal pain with altered bowel habits for >3 months, with normal investigations excluding organic pathology. The alternating diarrhea and constipation with bloating is typical of IBS-mixed subtype. Management includes dietary advice (low FODMAP diet), antispasmodics, and psychological support if needed.

Question 23

A 55-year-old man with diabetes presents with a painless ulcer on his right great toe. On examination, he has absent foot pulses and reduced sensation to monofilament testing. What is the most important initial investigation?

- A) Ankle-brachial pressure index B) HbA1c C) X-ray of foot D) Wound culture E) Doppler ultrasound

Answer: A) Ankle-brachial pressure index

Explanation: This patient has a diabetic foot ulcer with clinical signs of peripheral arterial disease (absent foot pulses) and neuropathy. The ankle-brachial pressure index (ABPI) is essential to assess vascular status as it determines management - revascularization may be needed before the ulcer can heal. ABPI <0.9 indicates significant arterial disease. Wound culture and X-ray are also important but vascular assessment takes priority.

Question 24

A 30-year-old pregnant woman at 28 weeks gestation presents with sudden onset severe headache and blurred vision. Her BP is 170/110 mmHg. Urinalysis shows 2+ protein. What is the most appropriate initial treatment?

- A) Sublingual nifedipine B) IV labetalol C) Oral methyldopa D) IV hydralazine E) Oral amlodipine

Answer: B) IV labetalol

Explanation: This is severe pre-eclampsia requiring immediate antihypertensive treatment to reduce BP to <150/100 mmHg. IV labetalol is first-line for acute severe hypertension in pregnancy as it doesn't compromise uteroplacental blood flow. Sublingual nifedipine can cause precipitous BP drop and is avoided. The patient also needs magnesium sulfate for seizure prophylaxis and urgent obstetric review for delivery planning.

Question 25

A 70-year-old man presents with progressive dysphagia to solids over 2 months, associated with weight loss of 8kg. He has a history of heartburn for many years. What is the most appropriate investigation?

- A) Barium swallow B) CT chest and abdomen C) Upper GI endoscopy D) PET scan E) 24-hour pH monitoring

Answer: C) Upper GI endoscopy

Explanation: Progressive dysphagia with weight loss in an elderly patient with long-standing heartburn (possible Barrett's esophagus) raises concern for esophageal carcinoma. Upper GI endoscopy allows direct visualization, biopsy, and staging of any malignancy. This is the investigation of choice for dysphagia with alarm features. CT staging would follow if malignancy is confirmed.

Question 26

A 35-year-old woman presents with recurrent miscarriages (3 in the past 2 years) and a history of deep vein thrombosis. Blood tests show prolonged APTT that doesn't correct with mixing studies. What is the most likely diagnosis?

- A) Factor V Leiden mutation B) Protein C deficiency C) Antiphospholipid syndrome D) Prothrombin gene mutation E) Antithrombin deficiency

Answer: C) Antiphospholipid syndrome

Explanation: Antiphospholipid syndrome presents with recurrent pregnancy loss, arterial/venous thrombosis, and laboratory findings of lupus anticoagulant (prolonged APTT not correcting with mixing studies), anticardiolipin antibodies, or anti- β 2-glycoprotein I antibodies. The combination of pregnancy losses and thrombosis is highly suggestive. Treatment involves anticoagulation during pregnancy and long-term for thrombosis prevention.

Question 27

A 16-year-old boy presents with a 1-week history of sore throat and fever. He has developed a widespread maculopapular rash after taking amoxicillin prescribed by his GP. What is the most likely underlying diagnosis?

- A) Penicillin allergy B) Infectious mononucleosis C) Scarlet fever D) Kawasaki disease E) Stevens-Johnson syndrome

Answer: B) Infectious mononucleosis

Explanation: The development of a maculopapular rash after amoxicillin in the context of fever and sore throat strongly suggests infectious mononucleosis (EBV). This is not true penicillin allergy but occurs in >90% of patients with EBV infection who receive ampicillin or amoxicillin. The patient likely has glandular fever that was mistaken for bacterial pharyngitis, leading to inappropriate antibiotic prescription.

Question 28

A 50-year-old man presents with acute severe epigastric pain radiating to his back, nausea, and vomiting. His serum amylase is 1200 U/L (normal <100). He drinks 40 units of alcohol per week. What is the most likely diagnosis?

- A) Peptic ulcer disease B) Acute cholangitis C) Acute pancreatitis D) Myocardial infarction E) Aortic dissection

Answer: C) Acute pancreatitis

Explanation: Classic presentation of acute pancreatitis with severe epigastric pain radiating to the back, elevated amylase (>3 times upper limit of normal), and alcohol history. The two most common causes are gallstones and alcohol. CT abdomen may show pancreatic inflammation. Management includes IV fluids, analgesia, nil by mouth initially, and treatment of underlying cause. Complications include pseudocyst formation and pancreatic necrosis.

Question 29

A 25-year-old woman presents with palpitations and anxiety. She has lost 5kg in weight despite increased appetite. On examination, her pulse is 110 bpm and irregular. What investigation would be most helpful?

- A) 24-hour Holter monitor
- B) Echocardiogram
- C) Thyroid function tests
- D) Full blood count
- E) Urea and electrolytes

Answer: C) Thyroid function tests

Explanation: The combination of weight loss despite increased appetite, palpitations, anxiety, and irregular pulse (likely atrial fibrillation) strongly suggests hyperthyroidism. Thyroid function tests (TSH, free T4) are essential to confirm the diagnosis.

Hyperthyroidism is a common cause of atrial fibrillation in young people. Once confirmed, further tests like thyroid antibodies and isotope scan may determine the specific cause.

Question 30

A 4-year-old child presents with fever, irritability, and neck stiffness. Lumbar puncture shows: opening pressure 25 cmH₂O, WCC 800/ μ L (90% neutrophils), protein 2.8 g/L, glucose 1.2 mmol/L (serum glucose 6.0 mmol/L). What is the most likely diagnosis?

- A) Viral meningitis
- B) Bacterial meningitis
- C) Tuberculous meningitis
- D) Fungal meningitis
- E) Normal CSF

Answer: B) Bacterial meningitis

Explanation: The CSF findings indicate bacterial meningitis: elevated opening pressure, high WCC with neutrophil predominance (>90%), elevated protein (>1.0 g/L), and low glucose with CSF:serum glucose ratio <0.4. These findings contrast with viral meningitis which typically shows lymphocytic predominance, normal/mildly elevated protein, and normal glucose. Immediate IV antibiotics are required.

Question 31

A 65-year-old man presents with progressive shortness of breath on exertion and orthopnea. Chest X-ray shows cardiomegaly and upper lobe blood diversion. Echocardiogram shows ejection fraction of 35%. What is the most appropriate first-line medication?

- A) Furosemide
- B) ACE inhibitor
- C) Beta-blocker
- D) Spironolactone
- E) Digoxin

Answer: B) ACE inhibitor

Explanation: This patient has heart failure with reduced ejection fraction (HFrEF). According to guidelines, ACE inhibitors are first-line treatment as they improve symptoms, reduce hospitalizations, and reduce mortality. They should be started at low dose and titrated up. Beta-blockers are also disease-modifying but are usually added after ACE inhibitors are established. Diuretics treat symptoms but don't improve survival.

Question 32

A 28-year-old man presents with sudden onset severe headache described as "worst headache of my life." He is photophobic and has neck stiffness. CT head is normal. What is the next most appropriate investigation?

- A) MRI brain
- B) Lumbar puncture
- C) CT angiogram
- D) Carotid Doppler
- E) EEG

Answer: B) Lumbar puncture

Explanation: This presentation suggests subarachnoid hemorrhage (SAH). When CT head is normal within 12 hours of symptom onset, lumbar puncture is required to look for xanthochromia (bilirubin from blood breakdown) which distinguishes SAH from traumatic tap. CSF spectrophotometry should be performed. If SAH is confirmed, CT angiography would follow to identify the source of bleeding (aneurysm).

Question 33

A 45-year-old woman presents with fatigue, hair loss, and cold intolerance. Blood tests show TSH 15 mU/L (normal 0.4-4.0), free T4 8 pmol/L (normal 10-22). Anti-TPO antibodies are positive. What is the most likely diagnosis?

- A) Hashimoto's thyroiditis B) De Quervain's thyroiditis C) Pituitary adenoma D) Iodine deficiency E) Drug-induced hypothyroidism

Answer: A) Hashimoto's thyroiditis

Explanation: Primary hypothyroidism (elevated TSH, low T4) with positive anti-TPO antibodies indicates Hashimoto's thyroiditis, the most common cause of hypothyroidism in developed countries. This is an autoimmune condition causing gradual thyroid destruction. Treatment is lifelong levothyroxine replacement, starting at 50-100 μ g daily depending on age and cardiovascular status, with dose titration based on TSH levels.

Question 34

A 60-year-old man presents with crushing central chest pain lasting 45 minutes. His ECG shows ST depression in leads V4-V6. Troponin I is elevated at 0.8 ng/ml (normal <0.04). What is the most likely diagnosis?

- A) Unstable angina B) NSTEMI C) STEMI D) Pericarditis E) Aortic dissection

Answer: B) NSTEMI

Explanation: This presentation indicates Non-ST elevation myocardial infarction (NSTEMI): typical cardiac chest pain with ST depression (not elevation) and elevated troponin indicating myocardial necrosis. The absence of ST elevation distinguishes it from STEMI. Management includes dual antiplatelet therapy, anticoagulation, and early invasive strategy with angiography within 24-72 hours depending on risk stratification (GRACE score).

Question 35

A 22-year-old woman presents with a 6-month history of abdominal pain, diarrhea with blood and mucus, and weight loss. Colonoscopy shows continuous inflammation from rectum to sigmoid colon with ulceration. What is the most likely diagnosis?

- A) Crohn's disease B) Ulcerative colitis C) Irritable bowel syndrome D) Infectious colitis E) Colorectal cancer

Answer: B) Ulcerative colitis

Explanation: Ulcerative colitis characteristically causes continuous inflammation starting from the rectum and extending proximally, unlike Crohn's disease which shows skip lesions and can affect any part of the GI tract. The bloody diarrhea, weight loss, and continuous rectal-sigmoid involvement are typical. Treatment includes 5-ASA compounds for mild disease, corticosteroids for flares, and immunosuppressants for maintenance.

Question 36

A 35-year-old man presents with acute onset severe pain and swelling in his right great toe. The joint is red, hot, and extremely tender. His serum uric acid is 450 μ mol/L (normal 200-430). What is the most appropriate acute treatment?

- A) Allopurinol B) Colchicine C) Ibuprofen D) Prednisolone E) Paracetamol

Answer: C) Ibuprofen

Explanation: This is acute gout affecting the first metatarsophalangeal joint. For acute gout, first-line treatment is NSAIDs (like ibuprofen) if no contraindications, or colchicine if NSAIDs are contraindicated. Allopurinol should NOT be started during an acute attack as it can worsen symptoms. Urate-lowering therapy like allopurinol is started 2-4 weeks after the acute attack resolves to prevent future episodes.

Question 37

A 50-year-old woman presents with progressive muscle weakness, particularly affecting her shoulders and hips. She has difficulty rising from chairs and climbing stairs. Her CK is elevated at 2000 U/L. EMG shows myopathic changes. What is the most likely diagnosis?

- A) Polymyalgia rheumatica B) Polymyositis C) Myasthenia gravis D) Motor neuron disease E) Hypothyroidism

Answer: B) Polymyositis

Explanation: Polymyositis is an inflammatory myopathy causing progressive proximal muscle weakness (shoulders, hips) with elevated CK and myopathic changes on EMG. The difficulty with functional activities like rising from chairs is characteristic. Muscle biopsy would show inflammatory infiltrates. Treatment involves corticosteroids and immunosuppressants. Dermatomyositis would have associated skin changes.

Question 38

A 25-year-old woman at 10 weeks gestation presents with nausea, vomiting, and inability to keep fluids down for 3 days. She has lost 3kg in weight. Urine shows 3+ ketones. What is the most appropriate management?

- A) Oral antiemetics
- B) IV fluids and antiemetics
- C) Immediate delivery
- D) Dietary advice only
- E) Psychological support

Answer: B) IV fluids and antiemetics

Explanation: This is hyperemesis gravidarum - severe pregnancy sickness with dehydration, weight loss >5%, and ketonuria. Treatment requires IV fluid replacement (normal saline with thiamine) and antiemetics (cyclizine, ondansetron, or metoclopramide). Electrolyte monitoring is important. Most cases resolve by 16-20 weeks. Severe cases may require hospitalization and nutritional support.

Question 39

A 70-year-old man presents with gradually worsening breathlessness and dry cough over 6 months. He has a history of working in shipbuilding. Chest X-ray shows bilateral lower lobe reticular shadowing. What is the most likely diagnosis?

- A) COPD
- B) Asbestosis
- C) Silicosis
- D) Lung cancer
- E) Pulmonary edema

Answer: B) Asbestosis

Explanation: The occupational history of shipbuilding (high asbestos exposure), gradual onset breathlessness, dry cough, and bilateral lower lobe reticular changes on chest X-ray are characteristic of asbestosis. This is a pneumoconiosis caused by asbestos fiber inhalation. High-resolution CT would show more detail. There's increased risk of lung cancer and mesothelioma. Management is supportive with bronchodilators and pulmonary rehabilitation.

Question 40

A 30-year-old woman presents with episodes of feeling detached from herself and her surroundings, as if watching herself from outside her body. These episodes last 10-15 minutes and cause significant distress. What is the most likely diagnosis?

- A) Panic disorder
- B) Dissociative disorder
- C) Schizophrenia
- D) Depression
- E) Anxiety disorder

Answer: B) Dissociative disorder

Explanation: The description of feeling detached from oneself (depersonalization) and surroundings (derealization), as if watching from outside one's body, is characteristic of dissociative disorders, specifically depersonalization-derealization disorder. These episodes cause significant distress and functional impairment. Treatment may involve psychotherapy, particularly cognitive-behavioral therapy, and sometimes antidepressants.

Question 41

A 55-year-old man presents with sudden onset diplopia and ptosis affecting his left eye. On examination, his left pupil is dilated and non-reactive to light. Eye movements show limitation in all directions. What is the most likely diagnosis?

- A) Myasthenia gravis
- B) Third cranial nerve palsy
- C) Horner's syndrome
- D) Fourth cranial nerve palsy
- E) Sixth cranial nerve palsy

Answer: B) Third cranial nerve palsy

Explanation: Complete third cranial nerve (oculomotor) palsy presents with ptosis, diplopia, dilated non-reactive pupil, and limitation of eye movements in all directions except lateral (preserved by sixth nerve). The dilated pupil suggests compression rather than ischemia. Urgent investigation is needed to exclude posterior communicating artery aneurysm, especially if sudden onset and painful.

Question 42

A 40-year-old woman presents with fatigue, muscle aches, and morning stiffness lasting over 1 hour. She has tender points at multiple sites including neck, shoulders, and hips. Blood tests including ESR and CRP are normal. What is the most likely diagnosis?

- A) Rheumatoid arthritis
- B) Systemic lupus erythematosus
- C) Fibromyalgia
- D) Polymyalgia rheumatica
- E) Hypothyroidism

Answer: C) Fibromyalgia

Explanation: Fibromyalgia is characterized by widespread musculoskeletal pain, tender points, fatigue, and morning stiffness with normal inflammatory markers. It's a diagnosis of exclusion requiring at least 3 months of symptoms. The American College of Rheumatology criteria include widespread pain and tender points. Treatment is multimodal including exercise, cognitive-behavioral therapy, and medications like pregabalin or duloxetine.

Question 43

A 6-month-old baby presents with failure to thrive, chronic diarrhea, and recurrent respiratory infections. Sweat chloride test is 70 mmol/L (normal <40). What is the most likely diagnosis?

- A) Celiac disease
- B) Cystic fibrosis
- C) Immunodeficiency
- D) Inflammatory bowel disease
- E) Lactose intolerance

Answer: B) Cystic fibrosis

Explanation: Cystic fibrosis presents with failure to thrive, chronic diarrhea (pancreatic insufficiency), recurrent respiratory infections, and elevated sweat chloride (>60 mmol/L is diagnostic). It's caused by mutations in the CFTR gene leading to thick secretions. Treatment includes pancreatic enzyme replacement, chest physiotherapy, antibiotics for infections, and nutritional support. Genetic counseling is important for families.

Question 44

A 45-year-old man presents with progressive weakness in his hands, difficulty with fine motor tasks, and muscle twitching. On examination, he has muscle wasting in his hands with fasciculations and hyperreflexia. What is the most likely diagnosis?

- A) Carpal tunnel syndrome
- B) Cervical myelopathy
- C) Motor neuron disease
- D) Peripheral neuropathy
- E) Myasthenia gravis

Answer: C) Motor neuron disease

Explanation: Motor neuron disease (ALS) presents with progressive weakness, muscle wasting, fasciculations, and mixed upper (hyperreflexia) and lower motor neuron signs. The combination of muscle twitching (fasciculations) with hyperreflexia is characteristic. EMG shows denervation changes. Unfortunately, prognosis is poor with most patients dying within 3-5 years. Riluzole may slightly prolong survival.

Question 45

A 35-year-old woman presents with sudden onset severe headache, nausea, and visual disturbance. She is 35 weeks pregnant. Her BP is 180/120 mmHg and she has generalized seizure activity. What is the most appropriate immediate treatment?

- A) IV labetalol
- B) Magnesium sulfate
- C) Immediate delivery
- D) IV diazepam
- E) Sublingual nifedipine

Answer: B) Magnesium sulfate

Explanation: This is eclampsia - seizures in the context of pre-eclampsia. Magnesium sulfate is the first-line treatment for eclamptic seizures and prevention of further seizures. It's more effective than phenytoin or diazepam. After seizure control, blood pressure management with IV labetalol and urgent delivery planning are required. Magnesium sulfate is given as loading dose then maintenance infusion.

Question 46

A 25-year-old man presents with recurrent mouth ulcers, genital ulcers, and erythema nodosum on his shins. He also complains of joint pain and eye irritation. What is the most likely diagnosis?

- A) Herpes simplex infection
- B) Behçet's disease
- C) Crohn's disease
- D) Aphthous stomatitis
- E) Systemic lupus erythematosus

Answer: B) Behçet's disease

Explanation: Behçet's disease is a multisystem vasculitis presenting with recurrent oral ulcers (mandatory criterion), genital ulcers, skin lesions (erythema nodosum), and ocular involvement (uveitis). Joint involvement is common. It's more prevalent in Mediterranean and Middle Eastern populations. Treatment includes colchicine for mucocutaneous lesions and immunosuppressants for severe organ involvement.

Question 47

A 60-year-old woman presents with bone pain, particularly in her back and hips. X-rays show multiple lytic lesions in the spine and pelvis. Serum calcium is elevated, and she has a normocytic anemia. What investigation would be most helpful?

- A) Bone marrow biopsy
- B) Serum protein electrophoresis
- C) PSA level
- D) Mammography
- E) Thyroid function tests

Answer: B) Serum protein electrophoresis

Explanation: Multiple lytic bone lesions with hypercalcemia and anemia suggest multiple myeloma. Serum protein electrophoresis would detect monoclonal protein (M-protein). Additional tests include urine Bence Jones proteins, serum free light chains, and bone marrow biopsy for confirmation. The triad of hypercalcemia, anemia, and lytic bone lesions is classic for myeloma.

Question 48

A 30-year-old woman presents with fatigue, weight gain, and constipation following childbirth 6 months ago. She also complains of hair loss and feeling cold. TSH is 25 mU/L, free T4 is low. What is the most likely diagnosis?

- A) Postpartum thyroiditis
- B) Hashimoto's thyroiditis
- C) Postpartum depression
- D) Sheehan syndrome
- E) De Quervain's thyroiditis

Answer: A) Postpartum thyroiditis

Explanation: Postpartum thyroiditis affects 5-10% of women within the first year after delivery. It typically has a triphasic pattern: initial hyperthyroidism, then hypothyroidism, then recovery. This patient presents in the hypothyroid phase. Many women recover normal thyroid function, but some develop permanent hypothyroidism requiring lifelong levothyroxine. TPO antibodies are usually positive.

Question 49

A 70-year-old man presents with sudden onset weakness of his right face, arm, and leg. He is unable to speak but appears to understand commands. CT head shows no hemorrhage. What type of stroke is this most likely to be?

- A) Lacunar stroke
- B) Posterior circulation stroke
- C) Total anterior circulation stroke
- D) Partial anterior circulation stroke
- E) Transient ischemic attack

Answer: C) Total anterior circulation stroke

Explanation: Total anterior circulation stroke (TACS) presents with all three features: contralateral hemiplegia, homonymous hemianopia, and higher cognitive dysfunction (dysphasia/neglect). This patient has hemiplegia and expressive dysphasia (can't speak but understands). The sudden onset with complete neurological deficit affecting a large territory suggests middle cerebral artery occlusion. This has the worst prognosis among stroke subtypes.

Question 50

A 40-year-old man presents with progressive dyspnea on exertion and fatigue over 3 months. Echocardiogram shows dilated left ventricle with ejection fraction of 25%. He has no history of coronary artery disease or hypertension. What is the most likely diagnosis?

- A) Ischemic cardiomyopathy
- B) Dilated cardiomyopathy
- C) Hypertrophic cardiomyopathy
- D) Restrictive cardiomyopathy
- E) Pericardial disease

Answer: B) Dilated cardiomyopathy

Explanation: Dilated cardiomyopathy presents with heart failure symptoms and echocardiographic findings of dilated left ventricle with reduced ejection fraction in the absence of coronary artery disease or significant valvular disease. Causes include idiopathic (most common), viral myocarditis, alcohol, drugs, or genetic factors. Treatment follows standard heart failure guidelines with ACE inhibitors, beta-blockers, and diuretics.

Question 51

A 25-year-old woman presents with amenorrhea for 6 months, galactorrhea, and headaches. Visual field testing shows bitemporal hemianopia. What is the most likely diagnosis?

- A) Polycystic ovary syndrome
- B) Prolactinoma
- C) Craniopharyngioma
- D) Hypothyroidism
- E) Pregnancy

Answer: B) Prolactinoma

Explanation: The combination of amenorrhea, galactorrhea, headaches, and bitemporal hemianopia (indicating optic chiasm compression) strongly suggests a prolactinoma - a prolactin-secreting pituitary adenoma. Serum prolactin levels would be markedly elevated ($>5000 \text{ mU/L}$ suggests macroadenoma). MRI pituitary would confirm the diagnosis. Treatment includes dopamine agonists (cabergoline or bromocriptine) which shrink the tumor and normalize prolactin.

Question 52

A 55-year-old man presents with progressive jaundice, weight loss, and epigastric pain radiating to his back. On examination, he has a palpable gallbladder. CA 19-9 is markedly elevated. What is the most likely diagnosis?

- A) Cholangiocarcinoma
- B) Pancreatic carcinoma
- C) Choledocholithiasis
- D) Chronic pancreatitis
- E) Hepatocellular carcinoma

Answer: B) Pancreatic carcinoma

Explanation: Courvoisier's sign (painless jaundice with palpable gallbladder) suggests malignant obstruction of the common bile duct, most commonly pancreatic head carcinoma. The combination of weight loss, epigastric pain radiating to back, and elevated CA 19-9 supports this diagnosis. CT/MRI pancreas would show the mass. Unfortunately, prognosis is poor as most cases present at advanced stage.

Question 53

A 8-year-old child presents with fever, sore throat, and a sandpaper-like rash over the trunk and limbs. The tongue appears red with prominent papillae ("strawberry tongue"). What is the most likely diagnosis?

- A) Viral exanthem
- B) Scarlet fever
- C) Kawasaki disease
- D) Measles
- E) Erythema infectiosum

Answer: B) Scarlet fever

Explanation: Scarlet fever is caused by Group A Streptococcus producing erythrogenic toxin. It presents with fever, sore throat, characteristic sandpaper-like rash, and strawberry tongue. The rash typically spares the face but affects trunk and limbs, with desquamation occurring later. Treatment is penicillin V for 10 days. School exclusion until 24 hours after starting antibiotics.

Question 54

A 35-year-old woman presents with recurrent episodes of severe abdominal pain, nausea, and vomiting. The pain is in the right upper quadrant and radiates to the right shoulder. Episodes last 2-3 hours and often occur after fatty meals. What is the most likely diagnosis?

- A) Peptic ulcer disease B) Acute pancreatitis C) Biliary colic D) Appendicitis E)
Gastroenteritis

Answer: C) Biliary colic

Explanation: Biliary colic presents with severe right upper quadrant pain radiating to the right shoulder/scapula, triggered by fatty meals, lasting several hours. It's caused by gallbladder contraction against an obstructed cystic duct (usually gallstone). Pain is severe, constant during episodes, and associated with nausea/vomiting. Ultrasound abdomen would show gallstones. Treatment is laparoscopic cholecystectomy.

Question 55

A 65-year-old man presents with painless hematuria. Cystoscopy shows a bladder tumor. Histology confirms transitional cell carcinoma. What is the most important risk factor for this condition?

- A) Alcohol consumption B) Smoking C) High-fat diet D) Sedentary lifestyle E) Family history

Answer: B) Smoking

Explanation: Smoking is the most important risk factor for bladder cancer (transitional cell carcinoma), increasing risk 3-4 fold. Other risk factors include occupational exposure to aromatic amines, chronic bladder inflammation, and certain chemotherapy drugs. Transitional cell carcinoma accounts for >90% of bladder cancers. Treatment depends on staging - transurethral resection for superficial tumors, radical cystectomy for muscle-invasive disease.

Question 56

A 22-year-old woman presents with palpitations, tremor, and anxiety. She mentions her periods have become irregular. On examination, her pulse is 120 bpm and she has a smooth goiter. Free T4 is elevated, TSH is suppressed. What is the next most appropriate investigation?

- A) Thyroid ultrasound B) Radioiodine uptake scan C) TSH receptor antibodies D) Anti-TPO antibodies E) Fine needle aspiration

Answer: C) TSH receptor antibodies

Explanation: In a young woman with hyperthyroidism and smooth goiter, Graves' disease is most likely. TSH receptor antibodies (TRAb) are specific for Graves' disease and help differentiate it from other causes of hyperthyroidism like toxic multinodular goiter or thyroiditis. Positive TRAb confirms Graves' disease and influences treatment choice (antithyroid drugs, radioiodine, or surgery).

Question 57

A 50-year-old man presents with progressive shortness of breath and ankle swelling. Chest X-ray shows cardiomegaly and pulmonary edema. ECG shows atrial fibrillation. Echocardiogram shows severe mitral regurgitation. What is the most likely cause of his symptoms?

- A) Ischemic heart disease B) Mitral valve disease C) Hypertensive heart disease D) Cardiomyopathy E) Pericardial disease

Answer: B) Mitral valve disease

Explanation: Severe mitral regurgitation can cause heart failure symptoms due to volume overload and reduced forward cardiac output. The development of atrial fibrillation is common due to left atrial dilatation from chronic volume overload. Echocardiography confirms the diagnosis and assesses severity. Treatment may require mitral valve repair or replacement depending on symptoms, ventricular function, and valve morphology.

Question 58

A 30-year-old man presents with recurrent kidney stones. His serum calcium is elevated at 2.8 mmol/L (normal 2.2-2.6). PTH is also elevated. What is the most likely diagnosis?

- A) Sarcoidosis
- B) Primary hyperparathyroidism
- C) Malignancy
- D) Vitamin D toxicity
- E) Milk-alkali syndrome

Answer: B) Primary hyperparathyroidism

Explanation: Elevated calcium with elevated (or inappropriately normal) PTH indicates primary hyperparathyroidism, most commonly due to parathyroid adenoma. This causes hypercalcemia leading to kidney stones, bone disease, psychiatric symptoms ("stones, bones, groans, and psychiatric moans"). 24-hour urine calcium, bone density, and parathyroid imaging (ultrasound/sestamibi scan) would be performed. Treatment is parathyroidectomy if indicated.

Question 59

A 45-year-old woman presents with fatigue, weight gain, and depression. She also complains of dry skin and constipation. Blood tests show TSH 12 mU/L, free T4 8 pmol/L. What is the most appropriate treatment?

- A) Liothyronine (T3)
- B) Levothyroxine (T4)
- C) Combined T3/T4 therapy
- D) Iodine supplementation
- E) No treatment needed

Answer: B) Levothyroxine (T4)

Explanation: This patient has primary hypothyroidism (elevated TSH, low T4) with typical symptoms. Levothyroxine is the treatment of choice, starting at 50-100 μ g daily depending on age and cardiac status. Dose is titrated based on TSH levels, aiming for TSH 0.4-4.0 mU/L. T3 therapy is not routinely recommended. Full symptom resolution may take several months after achieving euthyroid state.

Question 60

A 35-year-old woman presents with sudden onset severe headache and neck stiffness. CT head shows subarachnoid hemorrhage. CT angiogram reveals an anterior communicating artery aneurysm. What is the most appropriate immediate management?

- A) Surgical clipping
- B) Endovascular coiling
- C) Conservative management
- D) Lumbar puncture
- E) Anticoagulation

Answer: B) Endovascular coiling

Explanation: For ruptured intracranial aneurysms, early aneurysm securement (within 24-72 hours) is crucial to prevent rebleeding. Endovascular coiling is often preferred over surgical clipping, especially for anterior circulation aneurysms, as it's less invasive with lower morbidity. The International Subarachnoid Aneurysm Trial (ISAT) showed better outcomes with coiling for suitable aneurysms. Nimodipine should also be given to prevent vasospasm.

Question 61

A 28-year-old man presents with acute onset severe scrotal pain and swelling. The affected testicle is high-riding and horizontally oriented. Doppler ultrasound shows absent blood flow. What is the most appropriate management?

- A) Antibiotics
- B) Surgical exploration
- C) Analgesia and observation
- D) Epididymectomy
- E) Orchidectomy

Answer: B) Surgical exploration

Explanation: This is testicular torsion requiring immediate surgical detorsion and bilateral orchiopexy. The clinical features (acute severe pain, high-riding horizontal testicle, absent blood flow on Doppler) are diagnostic. Time is critical - viable salvage rates are >90% if detorsion occurs within 6 hours, dropping significantly after 24 hours. Waiting for further investigations would risk testicular loss.

Question 62

A 60-year-old woman presents with bone pain and fatigue. Blood tests show calcium 2.9 mmol/L, phosphate 0.6 mmol/L, ALP 200 U/L. X-rays show osteopenia and Looser zones. What is the most likely diagnosis?

- A) Osteoporosis B) Osteomalacia C) Paget's disease D) Multiple myeloma E) Metastatic bone disease

Answer: B) Osteomalacia

Explanation: Osteomalacia (adult rickets) presents with bone pain, muscle weakness, hypocalcemia, hypophosphatemia, elevated ALP, and characteristic Looser zones (pseudo fractures) on X-ray. It's caused by vitamin D deficiency or resistance. 25-hydroxyvitamin D levels would be low. Treatment involves vitamin D supplementation (colecalciferol) with calcium. In severe cases, high-dose vitamin D may be needed initially.

Question 63

A 25-year-old woman presents with a 2-week history of fever, weight loss, and a new heart murmur. Blood cultures grow Streptococcus viridans. Echocardiogram shows vegetation on the mitral valve. What is the most likely diagnosis?

- A) Rheumatic fever B) Infective endocarditis C) Myocarditis D) Pericarditis E) Cardiomyopathy

Answer: B) Infective endocarditis

Explanation: The Duke criteria for infective endocarditis include positive blood cultures, echocardiographic evidence of endocardial involvement (vegetation), and clinical features (fever, new murmur). Streptococcus viridans is a common cause of subacute endocarditis, often affecting previously normal valves in young people. Treatment requires prolonged IV antibiotics (penicillin + gentamicin for streptococcal endocarditis) for 4-6 weeks.

Question 64

A 50-year-old man presents with progressive dysphagia to both solids and liquids, chest pain, and regurgitation of undigested food. Barium swallow shows a dilated esophagus with smooth tapering at the gastroesophageal junction ("bird's beak" appearance). What is the most likely diagnosis?

- A) Esophageal carcinoma B) Achalasia C) Esophageal stricture D) GERD E) Esophageal spasm

Answer: B) Achalasia

Explanation: Achalasia is characterized by failure of lower esophageal sphincter relaxation and loss of esophageal peristalsis. The classic presentation includes dysphagia to both solids and liquids, regurgitation, chest pain, and weight loss. The "bird's beak" appearance on barium swallow is pathognomonic. Manometry confirms the diagnosis. Treatment options include pneumatic dilatation, laparoscopic Heller myotomy, or peroral endoscopic myotomy (POEM).

Question 65

A 35-year-old woman presents with recurrent miscarriages (4 in 2 years), prolonged APTT, and a history of DVT. Anticardiolipin antibodies are positive. What is the most appropriate treatment during future pregnancies?

- A) Aspirin alone B) Warfarin C) Aspirin and low molecular weight heparin D) No treatment E) Prednisolone

Answer: C) Aspirin and low molecular weight heparin

Explanation: Antiphospholipid syndrome with recurrent pregnancy loss requires combination therapy with low-dose aspirin (75mg daily) and prophylactic low molecular weight heparin (LMWH) throughout pregnancy and 6 weeks postpartum. This combination significantly reduces pregnancy loss rates. Warfarin is teratogenic and contraindicated in pregnancy. Close monitoring for pre-eclampsia and growth restriction is also required.

Question 66

A 60-year-old man presents with progressive memory loss and behavioral changes over 8 months. MRI shows frontotemporal atrophy. What is the most likely diagnosis?

- A) Alzheimer's disease
- B) Vascular dementia
- C) Frontotemporal dementia
- D) Lewy body dementia
- E) Normal pressure hydrocephalus

Answer: C) Frontotemporal dementia

Explanation: Frontotemporal dementia typically presents with early behavioral changes, personality changes, and language difficulties rather than memory loss (which is more prominent in Alzheimer's). The younger age of onset (typically 45-65 years) and MRI showing frontotemporal atrophy support this diagnosis. There's no specific treatment, but behavioral management and family support are important.

Question 67

A 25-year-old man presents with bloody diarrhea, abdominal pain, and weight loss over 3 months. Colonoscopy shows skip lesions with deep ulceration and cobblestone appearance. Histology shows transmural inflammation with granulomas. What is the most likely diagnosis?

- A) Ulcerative colitis
- B) Crohn's disease
- C) Infectious colitis
- D) Ischemic colitis
- E) Radiation colitis

Answer: B) Crohn's disease

Explanation: Crohn's disease is characterized by skip lesions (discontinuous inflammation), transmural inflammation, cobblestone appearance, and non-caseating granulomas on histology. It can affect any part of the GI tract from mouth to anus. Complications include strictures, fistulas, and perforation. Treatment includes 5-ASA compounds, corticosteroids for flares, immunosuppressants (azathioprine, methotrexate), and anti-TNF agents for severe disease.

Question 68

A 45-year-old woman presents with fatigue, joint pain, and a butterfly rash across her cheeks and nose. Blood tests show positive ANA and anti-dsDNA antibodies. Complement levels (C3, C4) are low. What is the most likely diagnosis?

- A) Systemic sclerosis
- B) Sjögren's syndrome
- C) Systemic lupus erythematosus
- D) Dermatomyositis
- E) Mixed connective tissue disease

Answer: C) Systemic lupus erythematosus

Explanation: SLE diagnosis requires 4 or more of 11 ACR criteria. This patient has malar rash, arthritis, positive ANA, and anti-dsDNA antibodies (highly specific for SLE). Low complement levels indicate disease activity. SLE is a multisystem autoimmune disease requiring immunosuppressive treatment. Monitoring for renal involvement (lupus nephritis) is crucial as it affects prognosis.

Question 69

A 70-year-old man presents with sudden onset weakness in his right arm and difficulty speaking. CT head shows acute infarct in the left middle cerebral artery territory. He arrived 2 hours after symptom onset. What is the most appropriate treatment?

- A) Aspirin 300mg
- B) Alteplase
- C) Clopidogrel
- D) Warfarin
- E) Heparin

Answer: B) Alteplase

Explanation: This patient has acute ischemic stroke within the thrombolysis window (<4.5 hours from onset). Alteplase (tissue plasminogen activator) is indicated if there are no contraindications and CT excludes hemorrhage. Thrombolysis significantly improves functional outcomes when given early. Aspirin should be given 24 hours after thrombolysis or immediately if thrombolysis is contraindicated.

Question 70

A 30-year-old woman presents with amenorrhea, hirsutism, and acne. She has gained 10kg over the past year. Ultrasound shows multiple ovarian cysts. Testosterone and LH are elevated, FSH is normal. What is the most likely diagnosis?

- A) Congenital adrenal hyperplasia
- B) Polycystic ovary syndrome
- C) Ovarian tumor
- D) Cushing's syndrome
- E) Hypothyroidism

Answer: B) Polycystic ovary syndrome

Explanation: PCOS is diagnosed by Rotterdam criteria: 2 of 3 features - oligo/anovulation, hyperandrogenism (clinical/biochemical), polycystic ovaries on ultrasound. This patient has all three features. Elevated LH:FSH ratio and testosterone levels support the diagnosis. Management includes lifestyle modification, metformin for insulin resistance, combined oral contraceptive for menstrual regulation, and anti-androgens for hirsutism.

Question 71

A 55-year-old man presents with progressive shortness of breath and fatigue over 6 months. Echocardiogram shows concentric left ventricular hypertrophy with preserved ejection fraction. Cardiac catheterization shows normal coronary arteries. What is the most likely diagnosis?

- A) Ischemic cardiomyopathy
- B) Dilated cardiomyopathy
- C) Hypertrophic cardiomyopathy
- D) Heart failure with preserved ejection fraction
- E) Constrictive pericarditis

Answer: D) Heart failure with preserved ejection fraction

Explanation: Heart failure with preserved ejection fraction (HFpEF) presents with heart failure symptoms but normal/preserved LV systolic function (EF >50%). It's characterized by diastolic dysfunction with impaired ventricular filling. Common causes include hypertension, diabetes, and aging. The concentric LVH suggests pressure overload adaptation. Treatment focuses on symptom management with diuretics and treating underlying conditions, as specific therapies for HFpEF are limited.

Question 72

A 8-year-old child presents with fever, irritability, and a widespread petechial rash that doesn't blanch with pressure. The child appears unwell and has neck stiffness. What is the most appropriate immediate management?

- A) Oral antibiotics
- B) IV benzylpenicillin
- C) Lumbar puncture
- D) Blood cultures
- E) CT head

Answer: B) IV benzylpenicillin

Explanation: This presentation strongly suggests meningococcal septicemia with the non-blanching petechial rash and signs of meningitis. In suspected meningococcal disease, IV benzylpenicillin should be given immediately - don't delay for investigations. Early antibiotic treatment is life-saving. After antibiotics, further management includes IV fluids, blood cultures, and lumbar puncture if safe. Close contacts require chemoprophylaxis.

Question 73

A 40-year-old woman presents with recurrent episodes of severe headache lasting 4-12 hours, associated with nausea, vomiting, and photophobia. The headaches are preceded by visual aura consisting of zigzag lines. What is the most likely diagnosis?

- A) Tension headache
- B) Cluster headache
- C) Migraine with aura
- D) Temporal arteritis
- E) Subarachnoid hemorrhage

Answer: C) Migraine with aura

Explanation: Classic migraine with aura presents with visual aura (scintillating scotoma/zigzag lines) followed by unilateral throbbing headache lasting 4-72 hours, associated with nausea, vomiting, photophobia, and phonophobia. The visual aura typically lasts 20-60 minutes before the headache. Treatment includes triptans for acute attacks and prophylaxis (propranolol, topiramate) if frequent. Avoiding triggers is important.

Question 74

A 65-year-old man presents with progressive dyspnea and dry cough over 12 months. He has clubbing and bilateral fine inspiratory crackles. HRCT chest shows honeycombing and traction bronchiectasis in the lower lobes. What is the most likely diagnosis?

- A) COPD B) Asthma C) Idiopathic pulmonary fibrosis D) Sarcoidosis E) Hypersensitivity pneumonitis

Answer: C) Idiopathic pulmonary fibrosis

Explanation: IPF typically affects older men, presenting with progressive dyspnea, dry cough, and clubbing. HRCT shows characteristic features of honeycombing, traction bronchiectasis, and peripheral/basal predominance. It's the most common idiopathic interstitial pneumonia with poor prognosis (median survival 2-5 years). Treatment includes antifibrotic agents (pirfenidone, nintedanib) and lung transplantation in suitable candidates.

Question 75

A 50-year-old woman presents with fatigue, muscle weakness, and purple discoloration around her eyes (heliotrope rash). She also has difficulty rising from chairs and climbing stairs. CK is elevated at 3000 U/L. What is the most likely diagnosis?

- A) Polymyositis B) Dermatomyositis C) Inclusion body myositis D) Polymyalgia rheumatica E) Hypothyroidism

Answer: B) Dermatomyositis

Explanation: Dermatomyositis is characterized by the combination of inflammatory myopathy (proximal muscle weakness, elevated CK) and distinctive skin changes including heliotrope rash (purple discoloration around eyes), Gottron's papules over knuckles, and shawl sign. It's associated with increased risk of malignancy (especially in older patients). Treatment includes corticosteroids and immunosuppressants. Cancer screening is important.

Question 76

A 25-year-old man presents with acute onset severe lower back pain radiating down his left leg to the foot. He has difficulty walking and reports numbness in his left foot. Straight leg raise test is positive at 30 degrees. What is the most likely diagnosis?

- A) Mechanical back pain B) Lumbar disc herniation C) Spinal stenosis D) Cauda equina syndrome E) Ankylosing spondylitis

Answer: B) Lumbar disc herniation

Explanation: Acute disc herniation presents with severe back pain radiating in a dermatomal distribution (sciatica), positive straight leg raise test, and neurological signs (numbness, weakness). The L5/S1 level is most commonly affected. Most cases resolve with conservative treatment (analgesia, physiotherapy). MRI is indicated if symptoms persist >6 weeks or if there are red flag signs (cauda equina syndrome, progressive neurological deficit).

Question 77

A 35-year-old woman at 20 weeks gestation presents with fever, dysuria, and loin pain. Urine culture grows E. coli sensitive to amoxicillin. What is the most appropriate treatment?

- A) Trimethoprim B) Nitrofurantoin C) Amoxicillin D) Ciprofloxacin E) Co-amoxiclav

Answer: C) Amoxicillin

Explanation: This is pyelonephritis in pregnancy (fever, loin pain, positive urine culture). Amoxicillin is safe in pregnancy and the organism is sensitive. Treatment duration should be

7-10 days. Trimethoprim is avoided in first trimester (folate antagonist), nitrofurantoin is avoided near term (risk of hemolysis), and ciprofloxacin/quinolones are generally avoided in pregnancy. Close monitoring is required as pyelonephritis can trigger preterm labor.

Question 78

A 60-year-old man presents with painless jaundice and weight loss over 2 months. CT abdomen shows a mass in the head of pancreas with bile duct dilatation. CA 19-9 is markedly elevated. What is the most appropriate next step?

- A) ERCP with stenting
- B) Percutaneous biopsy
- C) Surgical resection
- D) Chemotherapy
- E) Palliative care

Answer: A) ERCP with stenting

Explanation: In suspected pancreatic cancer with obstructive jaundice, initial management involves biliary decompression with ERCP and stent insertion to relieve jaundice and improve symptoms. This also allows tissue sampling for histological confirmation. Staging CT/MRI determines resectability - only 15-20% are suitable for curative resection (Whipple procedure). Most patients require palliative treatment with chemotherapy and supportive care.

Question 79

A 30-year-old woman presents with palpitations, heat intolerance, and weight loss. She has bilateral exophthalmos and pretibial myxedema. TSH is suppressed, free T4 is elevated. What is the most specific test to confirm the diagnosis?

- A) Thyroid ultrasound
- B) Radioiodine uptake scan
- C) TSH receptor antibodies
- D) Anti-TPO antibodies
- E) Thyroglobulin levels

Answer: C) TSH receptor antibodies

Explanation: This presentation is classic for Graves' disease with thyrotoxicosis and extrathyroidal manifestations (exophthalmos, pretibial myxedema). TSH receptor antibodies

(TRAb) are highly specific for Graves' disease and differentiate it from other causes of hyperthyroidism. These antibodies stimulate the TSH receptor, causing thyroid hormone excess and the characteristic eye signs. Treatment options include antithyroid drugs, radioiodine, or thyroidectomy.

Question 80

A 45-year-old man presents with progressive shortness of breath and fatigue. Echocardiogram shows severe aortic stenosis with valve area 0.8 cm^2 and mean gradient 50 mmHg. He is symptomatic with exertional dyspnea. What is the most appropriate management?

- A) Medical management with diuretics
- B) Balloon aortic valvuloplasty
- C) Aortic valve replacement
- D) ACE inhibitors
- E) Observation

Answer: C) Aortic valve replacement

Explanation: Severe symptomatic aortic stenosis (valve area $<1.0 \text{ cm}^2$, mean gradient $>40 \text{ mmHg}$) requires aortic valve replacement to prevent sudden cardiac death. Once symptoms develop, prognosis is poor without intervention (50% mortality at 2 years). Treatment options include surgical AVR or transcatheter AVR (TAVR) depending on surgical risk. Medical therapy alone is inadequate for severe symptomatic AS.

Question 81

A 25-year-old woman presents with fatigue, pallor, and spoon-shaped nails (koilonychia). Blood tests show Hb 7.5 g/dL, MCV 65 fL, ferritin 8 $\mu\text{g/L}$. What is the most likely cause?

- A) Vitamin B12 deficiency
- B) Iron deficiency anemia
- C) Thalassemia
- D) Chronic disease
- E) Folate deficiency

Answer: B) Iron deficiency anemia

Explanation: Iron deficiency anemia presents with fatigue, pallor, koilonychia (spoon nails), and laboratory findings of microcytic anemia (low MCV) with low ferritin. In young

women, menstrual losses are the commonest cause, but GI bleeding should be excluded if dietary intake is adequate. Treatment involves oral iron supplementation (ferrous sulfate) and addressing the underlying cause. Response should be monitored with reticulocyte count and hemoglobin.

Question 82

A 70-year-old man presents with confusion, agitation, and visual hallucinations that fluctuate throughout the day. He has a shuffling gait and mild tremor. His daughter reports he often falls asleep during conversations. What is the most likely diagnosis?

- A) Alzheimer's disease
- B) Vascular dementia
- C) Lewy body dementia
- D) Frontotemporal dementia
- E) Delirium

Answer: C) Lewy body dementia

Explanation: Lewy body dementia is characterized by fluctuating cognition, visual hallucinations (often well-formed), REM sleep behavior disorder, and parkinsonism (shuffling gait, tremor). The fluctuations in attention and alertness are characteristic, with patients appearing alert at times and drowsy at others. Diagnosis is clinical as there's no specific test. Treatment includes cholinesterase inhibitors and careful use of antipsychotics (can worsen parkinsonism).

Question 83

A 35-year-old woman presents with sudden onset severe chest pain and shortness of breath. She is 3 weeks postpartum and has been immobile due to cesarean section complications. D-dimer is elevated. What is the most appropriate initial investigation?

- A) Chest X-ray
- B) ECG
- C) CT pulmonary angiogram
- D) V/Q scan
- E) Echocardiogram

Answer: C) CT pulmonary angiogram

Explanation: This patient has high clinical probability for pulmonary embolism (recent surgery, immobility, postpartum period - all major risk factors). CTPA is the first-line

investigation for suspected PE in non-pregnant patients with high clinical probability. The elevated D-dimer supports the clinical suspicion but is not diagnostic. If PE is confirmed, anticoagulation with LMWH or DOAC should be started immediately.

Question 84

A 60-year-old man with diabetes presents with a painless red eye and gradually worsening vision over several days. Ophthalmoscopy shows new vessel formation on the retina and vitreous hemorrhage. What is the most likely diagnosis?

- A) Diabetic retinopathy
- B) Hypertensive retinopathy
- C) Age-related macular degeneration
- D) Retinal detachment
- E) Acute angle-closure glaucoma

Answer: A) Diabetic retinopathy

Explanation: This represents proliferative diabetic retinopathy with neovascularization and vitreous hemorrhage. Poor glycemic control leads to retinal ischemia, triggering new vessel formation (neovascularization). These new vessels are fragile and prone to bleeding, causing vitreous hemorrhage and vision loss. Treatment requires urgent ophthalmology referral for pan-retinal photocoagulation or anti-VEGF therapy. Optimal diabetes control is crucial to prevent progression.

Question 85

A 40-year-old woman presents with fatigue, weight gain, and cold intolerance. She has a family history of autoimmune disease. Blood tests show TSH 25 mU/L, free T4 6 pmol/L, positive anti-TPO antibodies. What is the most likely diagnosis?

- A) Hashimoto's thyroiditis
- B) De Quervain's thyroiditis
- C) Postpartum thyroiditis
- D) Drug-induced hypothyroidism
- E) Iodine deficiency

Answer: A) Hashimoto's thyroiditis

Explanation: Hashimoto's thyroiditis is the commonest cause of hypothyroidism in developed countries. It's an autoimmune condition characterized by lymphocytic infiltration

and destruction of thyroid tissue. Positive anti-TPO antibodies confirm the autoimmune etiology. Family history of autoimmune disease is common. Treatment is lifelong levothyroxine replacement, starting at 50-100 μ g daily with dose titration based on TSH levels.

Question 86

A 25-year-old man presents with acute onset severe testicular pain and swelling. The pain started suddenly while playing football 2 hours ago. On examination, the affected testicle is high-riding and the cremasteric reflex is absent. What is the most appropriate immediate management?

- A) Ultrasound Doppler
- B) Urine analysis
- C) Antibiotics
- D) Surgical exploration
- E) Analgesia and observation

Answer: D) Surgical exploration

Explanation: This is testicular torsion - a urological emergency requiring immediate surgical detorsion and orchiopexy. The clinical features (sudden severe pain, high-riding testicle, absent cremasteric reflex) are diagnostic. Time is critical - testicular salvage rates are >90% if detorsion occurs within 6 hours. Waiting for imaging would delay treatment and risk testicular necrosis. Both testes should be fixed (orchiopexy) to prevent future torsion.

Question 87

A 55-year-old woman presents with severe bone pain, particularly in her back and ribs. X-rays show multiple lytic lesions throughout the skeleton. Blood tests show elevated calcium, low albumin, and raised ESR. What investigation would be most helpful?

- A) Bone marrow biopsy
- B) Serum protein electrophoresis
- C) Bone scan
- D) Parathyroid hormone
- E) Vitamin D levels

Answer: B) Serum protein electrophoresis

Explanation: Multiple lytic bone lesions with hypercalcemia and systemic symptoms suggest multiple myeloma. Serum protein electrophoresis would detect a monoclonal protein band (M-protein). Additional investigations include serum-free light chains, urine Bence Jones proteins, and bone marrow biopsy for confirmation. The triad of anemia, bone lesions, and hypercalcemia with renal involvement (CRAB features) is characteristic of myeloma.

Question 88

A 30-year-old pregnant woman at 32 weeks gestation presents with sudden severe abdominal pain and vaginal bleeding. On examination, the uterus is tender and tense. Fetal monitoring shows bradycardia. What is the most likely diagnosis?

- A) Placenta previa
- B) Placental abruption
- C) Uterine rupture
- D) Preterm labor
- E) Vasa previa

Answer: B) Placental abruption

Explanation: Placental abruption presents with sudden severe abdominal pain, vaginal bleeding (may be concealed), tender tense uterus, and fetal distress. It's caused by premature separation of the placenta from the uterine wall. Risk factors include hypertension, trauma, smoking, and cocaine use. This is an obstetric emergency requiring immediate delivery. Complications include DIC, postpartum hemorrhage, and fetal death.

Question 89

A 65-year-old man presents with progressive dysphagia to solids over 2 months and 10kg weight loss. He has a 40-year history of heartburn. Endoscopy shows a stricturing lesion in the lower esophagus. What is the most likely diagnosis?

- A) Benign esophageal stricture
- B) Esophageal adenocarcinoma
- C) Esophageal squamous cell carcinoma
- D) Achalasia
- E) Eosinophilic esophagitis

Answer: B) Esophageal adenocarcinoma

Explanation: Progressive dysphagia with weight loss in a patient with long-standing GERD suggests esophageal adenocarcinoma, likely arising from Barrett's esophagus. The lower esophageal location is typical for adenocarcinoma (squamous cell carcinoma more commonly affects the upper/middle esophagus). Staging with CT/PET scan is required to determine resectability. Prognosis is generally poor unless detected early.

Question 90

A 22-year-old woman presents with palpitations, tremor, and anxiety. She has lost 8kg in weight despite increased appetite. On examination, she has a smooth goiter and her eyes appear prominent. TSH is <0.01 mU/L, free T4 is elevated. What is the most likely diagnosis?

- A) Toxic multinodular goiter
- B) Graves' disease
- C) Thyroiditis
- D) Thyroid cancer
- E) Factitious hyperthyroidism

Answer: B) Graves' disease

Explanation: Graves' disease is the commonest cause of hyperthyroidism in young people, particularly women. The combination of thyrotoxic symptoms, smooth diffuse goiter, and eye signs (exophthalmos) is characteristic. TSH receptor antibodies would be positive. Treatment options include antithyroid drugs (carbimazole/methimazole), radioiodine therapy, or thyroidectomy. Beta-blockers provide symptomatic relief while awaiting definitive treatment.

Question 91

A 45-year-old man presents with progressive shortness of breath and fatigue. Chest X-ray shows bilateral hilar lymphadenopathy and pulmonary infiltrates. Serum ACE is elevated. Bronchoscopy with biopsy shows non-caseating granulomas. What is the most likely diagnosis?

- A) Tuberculosis
- B) Sarcoidosis
- C) Lung cancer
- D) Histoplasmosis
- E) Hypersensitivity pneumonitis

Answer: B) Sarcoidosis

Explanation: Sarcoidosis is a multisystem granulomatous disease of unknown etiology. Pulmonary involvement is most common, presenting with bilateral hilar lymphadenopathy, pulmonary infiltrates, and non-caseating granulomas on biopsy. Elevated serum ACE and calcium levels are supportive. Many cases are asymptomatic and resolve spontaneously. Treatment with corticosteroids is reserved for symptomatic disease or organ dysfunction.

Question 92

A 70-year-old woman presents with severe headache and jaw claudication. She also complains of visual disturbances. ESR is 95 mm/hr. What is the most appropriate immediate treatment?

- A) Paracetamol
- B) Sumatriptan
- C) High-dose prednisolone
- D) Methotrexate
- E) Anti-TNF therapy

Answer: C) High-dose prednisolone

Explanation: This presentation suggests giant cell arteritis (temporal arteritis) with the classic triad of headache, jaw claudication, and visual symptoms in an elderly patient with markedly elevated ESR. Visual loss can be permanent if treatment is delayed. High-dose prednisolone (40-60mg daily) should be started immediately, even before temporal artery biopsy. Early treatment can prevent blindness. Biopsy should be performed within 1-2 weeks of starting steroids.

Question 93

A 35-year-old man presents with recurrent episodes of severe epigastric pain radiating to his back, associated with nausea and vomiting. He drinks 60 units of alcohol per week. CT abdomen shows pancreatic calcification and pseudocyst formation. What is the most likely diagnosis?

- A) Acute pancreatitis
- B) Chronic pancreatitis
- C) Pancreatic carcinoma
- D) Peptic ulcer disease
- E) Biliary colic

Answer: C) Vascular surgery referral

Explanation: This is a diabetic foot ulcer with critical limb ischemia (ABPI 0.6 indicates severe arterial disease). The absent pulses and low ABPI suggest significant peripheral arterial disease requiring vascular intervention. Urgent vascular surgery referral is needed for angioplasty or bypass to restore blood flow before the ulcer can heal. Without revascularization, the ulcer is unlikely to heal and amputation risk is high.

Question 98

A 35-year-old woman at 28 weeks gestation presents with severe headache, visual disturbances, and epigastric pain. Her BP is 170/110 mmHg. Urine shows 3+ protein. Platelet count is 90,000/ μ L. What is the most likely diagnosis?

- A) Gestational hypertension B) Pre-eclampsia C) HELLP syndrome D) Eclampsia E) Chronic hypertension

Answer: C) HELLP syndrome

Explanation: HELLP syndrome (Hemolysis, Elevated Liver enzymes, Low Platelets) is a severe variant of pre-eclampsia. This patient has severe hypertension, proteinuria, symptoms (headache, visual changes, epigastric pain indicating liver involvement), and low platelets. Blood tests would show hemolysis (elevated LDH, decreased haptoglobin) and elevated liver enzymes. This is an obstetric emergency requiring immediate delivery regardless of gestational age.

Question 99

A 65-year-old man presents with progressive weakness in his arms and legs over 6 months. He has difficulty swallowing and his speech is slurred. On examination, there is muscle wasting, fasciculations, and hyperreflexia. What is the most likely diagnosis?

- A) Multiple sclerosis B) Myasthenia gravis C) Motor neuron disease D) Guillain-Barré syndrome E) Cervical myelopathy

Answer: C) Motor neuron disease

Explanation: Motor neuron disease (ALS) presents with progressive weakness, muscle wasting, fasciculations (lower motor neuron signs), and hyperreflexia (upper motor neuron signs). The combination of upper and lower motor neuron signs in multiple regions with bulbar involvement (dysphagia, dysarthria) is characteristic. EMG shows denervation changes. Prognosis is poor with most patients dying within 3-5 years. Riluzole may modestly prolong survival.

Question 100

A 45-year-old woman presents with fatigue, weight gain, and depression over 6 months. She also complains of dry skin, constipation, and feeling cold. Blood tests show TSH 18 mU/L, free T4 7 pmol/L. What is the most appropriate treatment?

- A) Liothyronine B) Levothyroxine C) Combined T3/T4 therapy D) No treatment required E) Thyroidectomy

Answer: B) Levothyroxine

Explanation: This patient has primary hypothyroidism with typical symptoms and biochemical findings (elevated TSH, low free T4). Levothyroxine is the treatment of choice for hypothyroidism. Starting dose is typically 50-100 μ g daily depending on age, weight, and cardiac status. Dose is titrated based on TSH levels every 6-8 weeks until TSH is in the normal range (0.4-4.0 mU/L). Symptoms usually improve gradually over several months after achieving euthyroid state.