
45-year-old female presents to the ED with fever and headaches, a condition she has been experiencing for the past two days. Physical exam reveals neck stiffness concerning for meningitis. Lumbar puncture is performed and cerebrospinal fluid (CSF) studies are obtained. Opening pressure is noted at 300mmH₂O. CSF analysis reveals: 2,000 WBCs/ μ L, PMN predominance, no RBCs, glucose 24mg/dL and protein 106mg/dL. Serum glucose is 86mg/dL. Which of the following is the most likely diagnosis?

- A. Encephalitis
- B. HSV encephalitis
- C. Early bacterial meningitis
- D. West Nile virus
- E. Bacterial meningitis

C

Which of the following conditions can be a type I or even a type IV hypersensitivity reaction?

- A. Condition where a patient with infectious mononucleosis has IgM cold agglutinin antibodies and a hemolytic reaction
- B. Poison ivy dermatitis
- C. Latex allergy
- D. Arthritis in which anti-CCP is the most specific antibody
- E. Allergic rhinitis



23-year-old female goes to medical school in the Caribbean islands to complete her basic science training. Due to her hectic study schedule, she is always eating out at fast food restaurants. After she completes her basic science training that lasted 18 months, she comes back to the United States for her clinical rotations. For a few months, she complains of diarrhea, abdominal pain and seven pound weight loss. Stool studies are all negative. The patient has mild anemia and increased mean corpuscular volume (MCV). Which of the following would you expect to find in this patient?

- A. Increased folate, decreased vitamin B₁₂
- B. Decreased folate, normal vitamin B₁₂
- C. Normal folate, decreased vitamin B₁₂
- D. Decreased folate, decreased vitamin B₁₂
- E. None of the above



67-year-old female presents to your clinic because of weakness, cold intolerance, and lack of bowel movements. She says she has been feeling depressed lately. She denies weight gain. Physical exam is significant for blood pressure of 90/60mmHg. She is a thin individual and has hyperpigmentation of her skin. She denies suicide thoughts. You order lab work on the patient and it shows the following:

- Sodium 138mEq/L
- Potassium 5.2mEq/L
- Chloride 108mEq/L
- Bicarbonate 20mEq/L
- BUN 10mg/dL
- Creatinine 1.0mg/dL
- Glucose 58mg/dL
- TSH 20 μ U/mL
- Free T4: 0.1ng/dL



Which of the following is the best next step in management?

- A. Start her on thyroid replacement therapy
- B. Refer her to a psychiatrist for her depression
- C. Start dexamethasone, then oral levothyroxine, and perform a cosyntropin stimulation test
- D. Start hydrocortisone, then oral levothyroxine, and perform a cosyntropin stimulation test
- E. Check cosyntropin stimulation test and start levothyroxine

40-year-old female presents for an annual checkup. She has always had problems getting her blood pressure under control. She has had no other medical problems. She has been put on several regimens and is currently on hydrochlorothiazide, nifedipine, and clonidine. The patient's blood pressure is still elevated today at 165/110mmHg. You are now concerned about secondary causes of hypertension.

Her aldosterone:renin ratio is normal. 24-hour urine cortisol is normal. 24-hour urine metanephrine and catecholamine levels are high. You order a CT scan of the adrenals that confirms that the patient has a mass. Which of the following is the most appropriate next step in management?

- A. Observe at this time
- B. Surgery
- C. Phenoxybenzamine, then beta blocker, and then surgery
- D. Beta blocker, then phenoxybenzamine, and then surgery
- E. Phenoxybenzamine and beta blocker concurrently, then surgery



All of the following scenarios require an LDL goal of 100mg/dL, ideally less than 70mg/dL except:

- A. 45-year-old female complaining of polydipsia found to have random sugar of 250mg/dL
- B. 55-year-old male found to have Non-ST-Segment Myocardial Infarction (NSTEMI) and undergoes cardiac stenting
- C. 68-year-old male smoker found to have 2.5cm abdominal aortic aneurysm on an ultrasound
- D. 51-year-old female with dizziness found to have severe carotid artery stenosis
- E. 39-year-old obese male with hypertension on lisinopril

E

11. A 25-year-old female is admitted with acute dyspnea and chest pain. A diagnosis of pulmonary embolism is confirmed and her investigations reveal urine dipstick protein ++ but no blood, anti-double stranded DNA antibodies of 200 U/mL (0 - 73), with a 24 hour urinary protein concentration of 5g (< 0.2). Which one of the following diagnoses is most likely to be found on renal biopsy?

- A) AA amyloid**
- B) Focal segmental glomerulonephritis**
- C) IgA nephropathy**
- D) Membranous nephropathy**
- E) Minimal change nephropathy.**

Answer: D

29. Hyperthyroidism can be caused by all of the following except:

- A. Graves' disease.
- B. Plummer's disease.
- C. Struma ovarii.
- D. Hashimoto's disease.
- E. Medullary carcinoma of the thyroid.

Answer: E

28. Which of the following antimicrobials is associated with prolongation of the QT interval?

- A) Coamoxiclav
- B) Gentamicin
- C) Cefuroxime
- D) Erythromycin
- E) Isoniazid

Answer: D

7. A 45-year-old man reports to his primary care physician that his wife has noted coarsening of his facial features over several years. In addition, he reports low libido and decreased energy. Physical examination shows frontal bossing and enlarged hands. An MRI confirms that he has a pituitary mass. Which of the following screening tests should be ordered to diagnose the cause of the mass?

- A) 24-Hour urinary free cortisol
- B) Adrenocorticotrophic hormone (ACTH) assay
- C) Growth hormone level
- D) Serum insulin-like growth factor-1 (IGF-1) level
- E) Serum prolactin level

Answer: D

39. A 32-year-old woman presents with left loin pain and haematuria. She is known to suffer with Crohn's disease.

Which of the following is likely to be the aetiology of this presentation?

- A) Hypercalciuria
- B) Hyperbilirubinaemia
- C) Hyperuricaemia
- D) Hyperoxaluria
- E) Type 1 renal tubular acidosis

Answer: D

33. A 64-year-old who suffers from haemochromatosis is seen in A&E with a 2-day history of pain and swelling in his right knee. On examination it is swollen and he has decreased range of movement. You aspirate his knee. What will the aspirate be most likely to show?

- A) Gram-positive cocci in clusters
- B) Positively birefringent crystals
- C) Gram-positive cocci in chains
- D) Inflammatory cells with haemosiderin deposition
- E) Negatively birefringent crystals

Answer: B

16. A 53-year-old healthy man was found to have a fasting plasma glucose of 7.3 mmol. Further testing showed HbA1c of 6.2. What should be done next?

- A) Repeat HbA1c**
- B) Repeat fasting glucose**
- C) Advise home glucose monitoring**
- D) lifestyle changes, repeat all tests in 3 months**
- E) Measure 2-hour postprandial glucose**

Answer: B

49. A 32-year-old female smoker presents with acute severe asthma. The SaO₂ are 80% on 15 L of oxygen and the pO₂ is 8.2kPa (10.5-13). There is widespread expiratory wheeze throughout the chest. She is given IV hydrocortisone, 100% oxygen and 5 mg of nebulised salbutamol.

What is the next step in your management

- A) IV augmentin
- B) IV magnesium
- C) IV potassium
- D) IV theophylline
- E) Oral prednisolone

Answer: B

42. A 52 year old woman referred because of palpitation, weight loss and increased sweating. 2 years back she was admitted to CCU because of Acute MI complicated by ventricular tachycardia and was discharged on amiodarone. Her TFT revealed TSH 0.01, FT4 > 100. RAIU showed increased uptake and U/S thyroid showed increased vascularity. What is the next immediate step:

- A) Stop amiodarone
- B) Start carbimazole
- C) Start steroids
- D) Give appointment with cardiologist to change amiodarone
- E) Observe and reassure the patient

Answer: B

20. A 62-year-old man is admitted to the emergency department with abdominal pain. The patient has a past history of ischaemic heart disease and atrial fibrillation. Computed tomography scan features are highly suggestive of ischaemic bowel. The patient's blood gases are as follows: pH = 7.25; p_{aO_2} = 10; p_{aCO_2} = 2.8; HCO_3^- = 18; Base excess = -8. Which of the following best describes the patient's acid-base status?

- A) Metabolic acidosis
- B) Metabolic acidosis with respiratory compensation
- C) Respiratory acidosis with metabolic compensation
- D) Metabolic acidosis with inadequate respiratory compensation
- E) Cannot be sure without a serum lactate level

Answer: D

11. A 72-year-old man presents with an acutely painful right knee. On examination, he had a temperature of 37°C with a hot, swollen right knee. Of relevance amongst his investigations, was his white cell count which was $12.6 \times 10^9/l$ and a knee X-ray revealed reduced joint space and calcification of the articular cartilage. Culture of aspirated fluid revealed no growth. What is the most likely diagnosis?

- A) Gout
- B) Psoriatic monoarthropathy
- C) Pseudogout
- D) Rheumatoid arthritis
- E) Septic arthritis

Answer: C

45. A 19-year-old student presents with acute shortness of breath and haemoptysis. She reported left loin pain and was found to have haematuria 2 weeks ago. She is under regular review by the renal physicians for nephrotic syndrome. Ultrasound of the kidney shows left renal vein thrombosis and a computed tomography pulmonary angiogram confirms acute pulmonary embolism. Which one of the following is the most likely cause of this patient's increased tendency for developing venous thrombosis?

- A) Factor V Leiden mutation
- B) High levels of anticardiolipin antibodies
- C) Protein S deficiency
- D) Protein C deficiency
- E) Antithrombin III deficiency

Answer: E

11. You see a 48-year-old lorry driver, who presents to you with a three-month history of heartburn after meals which has not been settling with antacids and PPIs. You suspect that the patient has a hiatus hernia. The most appropriate investigation for diagnosing a hiatus hernia is:

- A) Computer tomography (CT) scan
- B) Chest x-ray
- C) Upper GI endoscopy
- D) Barium meal
- E) Ultrasound

Answer: D

21. A 34-year-old woman was found to have a 2-cm right thyroid nodule at the time of a well woman examination. The remainder of the thyroid was palpably normal and there were no lymph nodes palpable. There was no history of thyroid disease or radiation therapy to her head or neck. She was clinically euthyroid. Thyroid-stimulating hormone (TSH) was normal. Which of the following tests would be the most useful in establishing a specific diagnosis?

- A) Ultrasound of the thyroid**
- B) Nuclear scan of the thyroid**
- C) Thyroid antibody studies**
- D) Fine needle aspiration of the nodule**
- E) CT of the neck**

Answer: D

Question 17

Which of the following is not a cause of hypokalemic distal (type 1) renal tubular acidosis?

- A Sjogren's syndrome
- B Primary biliary cirrhosis
- C Amphotericin B
- D Hypogammaglobulinaemia
- E Vitamin D intoxication

D

(18) side effect of hydrochlorothiazide $\rightarrow$ photosensitivity

(19) screening of polycystic kidney

$\hookrightarrow$ US

(20) strict fat diet

100 mg fat per day MCU is not indicated

$\hookrightarrow$ folate deficiency.

(21) coarse facial expression
+ wide hand

$\hookrightarrow$ Acromegaly.

(22) primary polydipsia $\neq$ primary polydipsia

(23) normotensive + hypokalemia $\Rightarrow$ Bartter syndrome

(24) diarrhea is not seen in safari African children

$\hookrightarrow$ Malaria.

① follow pegs dz of bone .

↳ ALP every 6 months

② cyclosporin toxicity
~~metastasis~~

↳ increase serum creatinin concentration

③ ~~RTA~~ RTA type II =
hypogammaglobulinemia

④ Corvidor

① ST elevation level II, III, aVF
↳ Enticoror MI

② chest pain relieved by sitting
↳ Acute pericarditis.

⑤ Pres (A) best choice to dx bronchiectasis.
↳ high resolution C.T

⑥ pleural effusion - true tuberculin test

Tuberculosis

⑦ hypokalemia
↳ hypo Mg.

⑦ ^{u vs l} osteomyelitis + diabetic foot

gusis is ~~+~~
↳ MRI

⑧ Renal

GN ~~dev. 5~~ + hepatitis C ~~di 015~~
membrano proliferative ~ 6

(nephrotic) GN ~~di 015~~ ~ 6
proteinuria ~ 5

⑨

~~di 015~~ knee pain + knee cool in touch
+ marked crepitus.

who confirm dx ~~+~~ X-ray.

⑩

target cell pneumonia + flu like symptoms

↳ staphylococcal pneumonia.

⑪

symptoms of pneumonia + alcoholics

↳ klebsilla pneumoniae

⑫

gusis ~~+~~ ~~di 015~~ skin rash

Refer to ~~di 015~~ skin rash
Refer to ophthalmology.

11. Nafcilin ← CKD & drug

12. DM → T4 RTA

13. * plasma osmolality ↓, urine osmolality normal
 * primary polydipsia

14. urine cl⁻ 15 (<20) → surreptitious Vomiting

15. rash & dermatomyositis
 * Screening for malignancy

16. HTN + Hypo kalemia → Adrenal cortex
 urea & Cr → normal

Imaging

17. Asthma, next step → steroid + LABA

منه فطار اسنه مكانه كانه الجواب آخر فطار

62-year-old male with a 40 packs per year smoking history presents with shortness of breath and increased productive cough. He quit smoking two months ago. Pulmonary function testing reveals an FEV1/FVC of 68% with an FEV1 of 65%. He is currently on albuterol as needed. Which of the following would be the best addition to his current regimen?

- A. Inhaled corticosteroids
- B. Montelukast
- C. Theophylline
- D. Long acting beta agonists
- E. Refer him for lung reduction surgery

D

23. acromegaly متلازمة تضخم العظام
 ↑ sweating + coarsening of face

② measure IGF-1 level

24. renal impairment + pi, DM etc.
 Most appropriate investigation?

② Micro albuminuria (Albumin/cr ratio)

25. COPD, which common in Both
 emphysema & chronic bronchitis.

② Dyspnea

26. Megaloblastic anemia → B12 deficiency
 (MCV $\approx$ 105)

27. Drug exacerbate GERD → Theophylline

18. Thyroid nodule _____, most useful diagnostic test? → ② FNA of nodule

19. recurrent cough, no cardiac, resp. problem
CXR normal
② 24-h pH monitoring (GERD)

20. most appropriate in DX of Hiatus hernia
② Barium meal

21. pancreatitis ~~is~~

~~worse prognosis~~
Ranson's 11 bpts. worse except ~~amylase~~ worse prognostic factor ~~is~~
Criteria

~~diagnosis~~
22. Hematuria + loin pain: b/c Crohn's ~~is~~
Stone due to
② Hyperoxaluria (oxalate stone)

28 Malaria → blood film

29 Meningitic (most common) → *Neisseria meningitidis*.

↑ glucose & vomiting, Diarrhea: glucagonoma
+ skin rash

② Measure glucagon level

2 - not a cause of Type 1 RTA

② Hypo gamma globulinemia

3. Coronary angiography → ② Cholesterol embolism

4. Thyroid nodule, Hyperthyroid → ② Carbimazole

5. Carcinoid lung → Cushing

6. Marfan → Pneumothorax

7. Italy → Legionella

8. flu-like symptom → Staph. aureus

9. paget chr → ALP every 6 months

10. generalized lymphadenopathy + ↑ monocyte
+ fever → ② Infectious mononucleosis
(Epstein Barr virus)

(13)

P&C + ~~the~~ 10 41 UC qsr
↳ ~~an~~ annular screening.

(14)

~~addition of ipr + sh + m + b + f~~
~~the m + f + b + f~~
~~the m + f + b + f~~

persistent HTN + CKD + DII ♀ Sp. 100%
Asymptomatic 1/2, glp is 1/2
1/2 - 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2
1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2

Set her up for 1/2 1/2
ambulatory BP monitor

(15)

1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2
↳ Inhaler ventolin

(16)

generalized. + sore throat 1/2
swollen lymph node

↳ Epstein bar virus.

(17)

1/2 metastize to liver 1/2 1/2
prostate cancer.

Question 59

Q

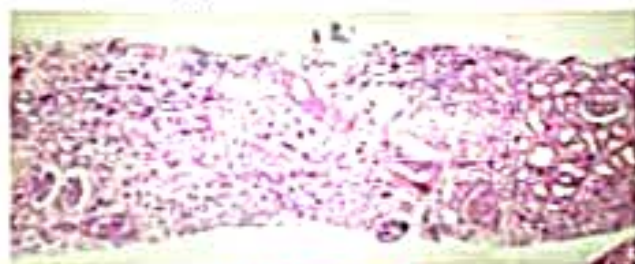
A 67-year-old man was referred to the nephrologists after he was noted to be oliguric following an elective coronary angiography. He had a past medical history of hypertension, for which he was taking ramipril. On examination he was euvolemic and had mottled skin changes on his legs.

Labs shows

serum sodium	134 mmol/L (137–144)
serum potassium	5.5 mmol/L (3.5–4.9)
serum urea	33.3 mmol/L (2.5–7.0)
serum creatinine	356 μ mol/L (60–110)
creatinine kinase	460 U/L (24–170)

haemoglobin	11.5 (11.5–16.5)
white cell count	$12.6 \times 10^9/L$ (4–11)
neutrophil count	$9.3 \times 10^9/L$ (1.5–7.0)
lymphocyte count	$2.5 \times 10^9/L$ (1.5–4.0)
eosinophil count	$1.3 \times 10^9/L$ (0.04–0.40)

Kidney biopsy is done. Look at the Image



Which is the most likely diagnosis in this patient clinical scenario?

- A Myeloma cast Nephropathy
- B Acute Phosphate Crystals deposition
- C Acute tubular necrosis
- D Cholesterol emboli
- E Acute interstitial nephritis

[Return to question 1](#)

[Return to contents](#)

41. A 65-year-old obese man presents with recurrent episodes of cough. His wife said his coughing attacks disturb her sleep almost every night. He noticed that his voice is hoarse in the morning. He has never smoked and has no history of cardiac or respiratory problems. There is no history of allergy and the chest X-ray is normal. The procedure most likely to yield crucial diagnostic information is

- A) Pulmonary function tests
- B) 24-hour pH monitoring of the lower oesophagus
- C) High-resolution CT scan of the chest
- D) Barium swallow
- E Indirect laryngoscopy

Answer: B

39. Carcinoid tumours of the foregut may be associated with which of the following

- A) Cushing's syndrome**
- B) hypercalcemia**
- C) pellagra**
- D) pulmonary hypertension**
- E) carcinoid syndrome**

Answer: A

19. Which of the following extraintestinal manifestations is associated with Crohn disease but not ulcerative colitis?

- A) Ankylosing spondylitis**
- B) Erythema nodosum**
- C) Nephrolithiasis**
- D) Thromboembolic disease**
- E) Uveitis**

Answer: C

33. Features of type 1 renal tubular acidosis include all of the following EXCEPT:

- A) Normal AG acidosis
- B) Hypokalemia
- C) Ca phosphate stone formation
- D) Urine pH decrease below 4, following oral ammonium chloride loading test
- E) Raised serum PTH hormone

Answer: D

37. A 59-year-old woman had three episodes of right renal colic over the last year. Review of system was remarkable for joint pain and fatigability. Past and family history were unremarkable. She is 7 years postmenopause and takes no medication. On physical examination BMI 28.5 kg/m², pulse 72 beat per minute, BP 150/95 mmHg. Laboratory data revealed. Fasting plasma glucose 89 mg/dl: Serum creatinine 1.1 mg/dl: Serum total calcium 11.9 mg/dl: Serum ionized calcium 6.8 mg/dl: Ultrasound of the abdomen revealed 2 stones at the right renal pelvis: 24 hour urinary calcium 365 mg (N < 250 mg) The most appropriate next diagnostic test is:

- A) Measurement of serum 25 hydroxyvitamin D.
- B) Measurement of serum PTH.
- C) Measurement of serum parathyroid related protein.
- D) Genetic testing for mutation in parathyroid calcium sensing receptor.
- E) 24 hour urinary uric acid.

Answer: B

30. A 37-year-old woman is admitted to accident and emergency with severe facial burns. Despite prompt management, she develops acute respiratory distress syndrome (ARDS). Which of the following is not associated with the diagnostic criteria for ARDS?

- A) Bilateral infiltrates on chest x-ray
- B) Acute onset
- C) Pulmonary capillary wedge pressure >19
- D) Refractory hypoxemia ($\text{PaO}_2:\text{FiO}_2 < 200$)
- E) Lack of clinical congestive heart failure

Answer: C

21. A 19-year-old man is recently diagnosed with type 1 diabetes and attends your clinic to ask about possible complications in the future. He mentions an uncle who has end-stage renal disease due to poorly controlled diabetes and specifically inquires about testing for early signs of renal impairment.

The most appropriate investigation is:

- A) Blood pressure**
- B) Microalbuminuria**
- C) Serum creatinine**
- D) Serum electrolytes**
- E) Urine dipstick for glucose**

Answer: B