Section 1: The acute take

Cases

1 An 82-year-old woman who requires venous thromboembolism prophylaxis

Patient name: Madeleine Henshaw
ID number: 100001
Date of birth: 24/09/1932
Age: 82 years
Weight: 85 kg, body mass index (BMI) 31 kg/m^2
Admission date: 07/01/2015
Date/time seen: 07/01/2015 12:00

History

PC Fall causing tibial fracture.
HPC Mrs Henshaw went straight to theatre from the emergency department at 09:30 for an open reduction and internal fixation to repair a tibial fracture. This was completed at 11:30. She has now been admitted to the surgical ward.
PMH Nil.
DH Nil.
Intolerances: none known.

Examination

General Comfortable at rest, pain appears well controlled.
Obs HR 65 beats/min, BP 125/85 mmHg, RR 14, oxygen saturation 96% breathing air.
CVS Normal examination.

Investigations

For results of investigations, see Table 1.1.

The consultant anaesthetist has called you to ask you to prescribe treatment to prevent venous thromboembolism (VTE). The operation was uncomplicated and the anaesthetist will prescribe postoperative analgesia.

Task

Prescribe appropriate VTE prophylaxis on the inpatient drug chart.

Table 1.1 Case 1 investigation results

Test	Value	Normal range
Hb	135 g/L	120–160
Plt	225 × 10^9/L	150–400
Ur	4.9 mmol/L	2.5–8.0
Creat	60 μmol/L	60–110
eGFR	>60 mL/min/1.73m^2	>60

2 A 104-year-old woman with respiratory failure

Patient name: Ms Maria Gomez
ID number: 100002
Date of birth: 16/08/1910
Age: 104 years
Weight: 68 kg
Admission date: 07/01/15
Date/time seen: 07/01/15 16:00

History

PC Shortness of breath.
HPC Ms Gomez has become increasingly short of breath and wheezy over the past 48 hours. She has had no cough or fever, and had otherwise been feeling well prior to this episode.
PMH Chronic obstructive pulmonary disease (COPD), including an infective exacerbation 2 years ago requiring non-invasive ventilation.
DH Seretide 250 Accuhaler® (fluticasone 250 micrograms, salmeterol 50 micrograms) 2 puffs twice daily, tiotropium 18 micrograms 1 puff once daily, salbutamol 100 micrograms 2 puffs as needed.
Intolerances: none known.
SH She is a current smoker who has smoked 5 cigarettes a day for 70 years.

Examination

General She is short of breath at rest.
Obs T 36°C, HR 80 beats/min, BP 118/64 mmHg, RR 26 breaths/min, SpO_2 95% breathing 35% oxygen via Venturi mask.
RS There is reduced expansion and polyphonic wheeze throughout the chest.

Investigations

CXR Hyperexpansion, but no consolidation.

Arterial blood gas
See Table 2.1.

Task

Ms Gomez is diagnosed with a non-infective exacerbation of COPD. Prescribe oxygen according to the results of her arterial blood gases.

Table 2.1 Case 2 arterial blood gas results

Test	Breathing air	28% oxygen	35% oxygen	Normal range
pH	7.39	7.36	7.31	7.35–7.45
PaO_2	6.8	8.4	9.8	10.6–14.5 kPa
$PaCO_2$	4.4	5.2	7.2	4.0–6.0 kPa
Bicarbonate	23	23	24	22–29 mmol/L
Base excess	0	+2	+3	±2 mmol/L
SpO_2	84%	89%	95%	

3 A 64-year-old man with severe acute abdominal pain

Patient name: Eoghan O'Connor
ID number: 100003
Date of birth: 18/10/1950
Age: 64 years
Weight: 73 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 18:10

History

PC Severe abdominal pain.

HPC Mr O'Connor has had left lower quadrant pain, fevers and malaise for the past 2 days. His abdominal pain has increased markedly and become more generalised over the past few hours and he now rates it as 10/10 in severity.

PMH Diverticular disease with one previous episode of uncomplicated diverticulitis.

DH Cod liver oil 1 capsule daily.
Intolerances: none known.

SH Smokes 1–2 cigarettes per day and drinks about 30 units of alcohol per week. He works as a security guard and is usually fit and active.

Examination

General He looks unwell and is clearly distressed by severe pain from his abdomen.

Obs T 38.1°C, HR 118 beats/min, BP 116/72 mmHg, RR 28 breaths/min, SpO_2 97% breathing oxygen 10 L/min via a facemask.

Systems Cardiorespiratory examination is normal. On abdominal examination, he has generalised rebound tenderness and guarding consistent with peritonitis.

Investigations

Baseline investigations are not yet available.

Your registrar has seen him and made a provisional diagnosis of acute abdomen due to diverticular perforation. She is arranging for him to be transferred urgently from the emergency department to the operating theatre for a laparotomy, and has asked you to 'deal with analgesia'. She has asked the nurses to keep Mr O'Connor 'nil by mouth'.

Task

Prescribe acute analgesia for immediate administration (all other aspects of his management are being appropriately addressed by colleagues).

4 A 55-year-old woman with atrial fibrillation

Patient name: Edna Sullivan
ID number: 100004
Date of birth: 26/12/1959
Age: 55 years
Weight: 78 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 15:00

History

PC Palpitations.

HPC Edna Sullivan has been referred to the emergency department by her GP with palpitations for the past 3 days. She has had no chest pain, is not short of breath and has been otherwise feeling well.

PMH Hypertension and hypercholesterolaemia.

DH Amlodipine 5 mg daily and simvastatin 40 mg daily.
Intolerances: none known.

SH She is a retired head teacher who lives independently with her husband. She has never smoked. She drinks 8 units of alcohol per week.

Examination

Obs T 36.5°C, HR 162 beats/min, BP 138/82 mmHg, RR 18 breaths/min, SpO_2 96% breathing room air.

CVS She has an irregularly irregular pulse. Her jugular venous pressure (JVP) is not raised, and she has normal heart sounds. There is no peripheral oedema.

RS Normal.

Investigations

For results of investigations, see Table 4.1.

A diagnosis of atrial fibrillation is made.

Task

Prescribe appropriate initial treatment for the management of Mrs Sullivan's atrial fibrillation.

Table 4.1 Case 4 investigation results

Test	Value	Normal range
Na^+	140 mmol/L	135–145
K^+	4.6 mmol/L	3.5–4.7
Ur	6.1 mmol/L	2.5–8.0
Creat	68 μmol/L	60–110
Adj Ca^{2+}	2.42 mmol/L	2.20–2.50
Mg^{2+}	1.0 mmol/L	0.7–1.0
FT4	16 pmol/L	10–23
TSH	3.0 mU/L	0.4–5.0
ECG	Rate 160 beats/min, no visible p-waves, irregular rhythm, no other abnormalities	
CXR	Normal	

5 A 32-year-old man with community-acquired pneumonia

Patient name: Dragos Hasdeu
ID number: 100005
Date of birth: 17/09/1982
Age: 32 years
Weight: 85 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 10:00

History

PC Dragos Hasdeu presented to the emergency department with left-sided chest pain and shortness of breath.

HPC The pain has come on gradually over 2 days. He initially thought it was a strained muscle, but now has a sharp left-sided chest pain on breathing or coughing. He normally has unlimited exercise tolerance. However, as the pain has got worse he has felt breathless walking short distances. He feels feverish and shivery and has developed a cough productive of brown sputum. He is able to eat and drink.

PMH He is usually fit and well with no previous significant illness.

DH None.
Intolerances: none known.

SH He works on a building site and lives in a flat with two friends. He smokes 15 roll up cigarettes per day and drinks alcohol at the weekends.

Examination

General He is in obvious discomfort on breathing.

Obs T 38.5°C, HR 102 beats/min, BP 112/86 mmHg, RR 32 breaths/min, SpO_2 93% breathing air.

RS His left lung base is dull to percussion. On auscultation there are crackles and bronchial breathing at the left lung base.

Investigations

For results of investigations see Table 5.1.

Task

A diagnosis of community-acquired pneumonia is made. Prescribe appropriate admission medication.

Table 5.1 Case 5 investigation results

Test	Value	Normal range
Hb	146 g/L	130–180
WCC	19.4×10^9/L	4.0–11.0
Neut	15.2×10^9/L	1.7–8.0
Plt	178×10^9/L	150–400
Na^+	144 mmol/L	135–145
K^+	4.1 mmol/L	3.5–4.7
Ur	9.6 mmol/L	2.5–8.0
Creat	72 μmol/L	60–110
CRP	284 mg/L	<10
CXR	Left lower lobe consolidation	

6 A 45-year-old woman with status epilepticus

Patient name: Helen Yarwood
ID number: 100006
Date of birth: 03/12/1969
Age: 45 years
Weight: 69 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 02:00

History

PC Helen Yarwood was brought into the emergency department by ambulance with repeated tonic–clonic seizures. You are called to see her because she is having a further seizure, which has lasted 9 minutes so far.

HPC Collateral history is available from her son who heard Mrs Yarwood fall out of bed. He found her having a seizure and called the ambulance. She had two further seizures in the ambulance and has not fully recovered consciousness in between.

PMH Mrs Yarwood has had epilepsy since her mid-teens. She usually has 1–2 seizures per year, each lasting around 3–5 minutes.

DH Carbamazepine 600 mg twice daily.
Intolerances: none known.

SH Mrs Yarwood lives with her son and daughter and is usually independent. She is a non-smoker and does not drink alcohol. She eats well and is not underweight.

Examination

General She is on her left side and is undergoing a tonic–clonic seizure. The trolley has rails which have been raised and padded. She has a nasal airway and intravenous cannula *in situ*. There are no contusions.

Obs T 36.4°C, HR 110 beats/min, BP 138/84 mmHg, SpO_2 92% breathing oxygen via non-rebreathe mask at 15 L/minute. Capillary blood glucose 5.9 mmol/L.

Investigations

Blood tests sent on admission, including full blood count, renal and hepatic function and electrolytes were all normal apart from:

Carbamazepine 1 mg/L 4 – 12 mg/L

A diagnosis of status epilepticus is made.

Task

Prescribe appropriate medication on the drug chart provided.

7 A 27-year-old woman with suspected bacterial meningitis

Patient name: Florence Menzes
ID number: 100007
Date of birth: 01/02/1987
Age: 27 years
Weight: 65 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 23:00

History

PC Florence Menzes is seen in the emergency department complaining of a severe headache.

HPC A generalised headache has come on over the past 8 hours, gradually increasing in severity. It is now so bad that it is painful for her to move and the light is hurting her eyes. She feels hot and cold and has vomited twice. There is no history of head injury or ear or sinus disease.

PMH No previous hospital admissions, no recent illness.

DH Microgynon 30 ® (ethinyloestradiol 30 micrograms, levonorgestrel 150 micrograms).
Intolerances: none known.

SH Mrs Menzes lives with her husband. She is a non-smoker who drinks 6 units of alcohol per week. Her last foreign travel was 5 years ago. She does not have any contacts that are unwell.

Examination

General She looks unwell and in pain. She is shading her eyes from the light.

Obs T 38.2°C, HR 98 beats/min, BP 138/82 mmHg, RR 14 breaths/min, SpO_2 100% breathing room air.

NS Glasgow Coma Scale 15/15, severe neck stiffness, positive Kernig's sign.
No focal neurological abnormalities.
Photophobia but no abnormalities on fundoscopy.

Skin No rash.

Investigations

For results of investigations, see Tables 7.1 and 7.2.

Computed tomography (CT) brain scan – no abnormality, no evidence of raised intracranial pressure.

Blood cultures, a blood sample for molecular studies and a throat swab have also been taken.

Task

A presumptive diagnosis of bacterial meningitis is made. Prescribe appropriate admission medication.

Table 7.1 Case 7 investigation results

Test	Value	Normal range
Hb	134 g/L	120–160
WCC	20.4×10^9/L	$4.0–11.0 \times 10^9$
Neut	18.2×10^9/L	$1.7–8.0 \times 10^9$
Plt	433×10^9/L	$150–400 \times 10^9$
Na^+	141 mmol/L	135–145
K^+	4.0 mmol/L	3.5–4.7
Ur	6.0 mmol/L	2.5–8.0
Creat	76 μmol/L	60–110
Gluc (random)	5.6 mmol/L	3.9–7.8
CRP	125 mg/L	<10
PT	14 sec	11–16
INR	0.9	0.8–1.1
APTT ratio	1.06	0.85–1.15

Table 7.2 Case 7 cerebrospinal fluid investigation results

Test	Result	Normal range
Appearance	Turbid	
Protein	1.2 g/L	0.2–0.4
Glucose	1.6 mmol/L	2/3 to 1/2 blood glucose
Polymorphs	244/mm^3	Nil
Organisms	No organisms seen on Gram-stain	

8 A 31-year-old woman with paracetamol overdose

Patient name: Eleanor Briggs
ID number: 100008
Date of birth: 04/04/1983
Age: 31 years
Weight: 65 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 14:00

History

PC Paracetamol overdose.

HPC Eleanor Briggs took 28 paracetamol 500-mg tablets 6 hours ago. She ingested all the tablets over the course of a few minutes. She had intended to hurt herself, but now regrets this. She did not take any other medicines, recreational drugs or alcohol. At present, she has no symptoms.

PMH None.

DH None.
Intolerances: none known.

SH She drinks alcohol socially, consuming about 14 units per week. She does not smoke cigarettes or take any other drugs.

Examination

General She looks anxious but well.

Obs T 36.8°C, HR 90 beats/min, BP 124/85 mmHg, RR 18 breaths/min, SpO_2 99% breathing air.

Systems Normal. In particular, she is not icteric and her abdomen is soft, with no hepatomegaly or right upper quadrant tenderness.

Investigations

For results of investigations see Table 8.1.

Task

Prescribe appropriate treatment, with reference to Figure 8.1.

Table 8.1 Case 8 investigation results

Test	Value	Normal range
Hb	140 g/L	120–160
MCV	6.4 fL	78–97
Plt	328 × 10^9/L	150–400 × 10^9
INR	1.0	0.8–1.1
Ur	4.7 mmol/L	2.5–8.0
Creat	58 μmol/L	60–110
Alb	38 g/L	35–48
Bil	10 μmol/L	<17
ALT	17 U/L	<40
ALP	48 U/L	35–120
CRP	<4 mg/L	<10
Paracetamol	118 mg/L (taken 4 h after paracetamol ingestion)	

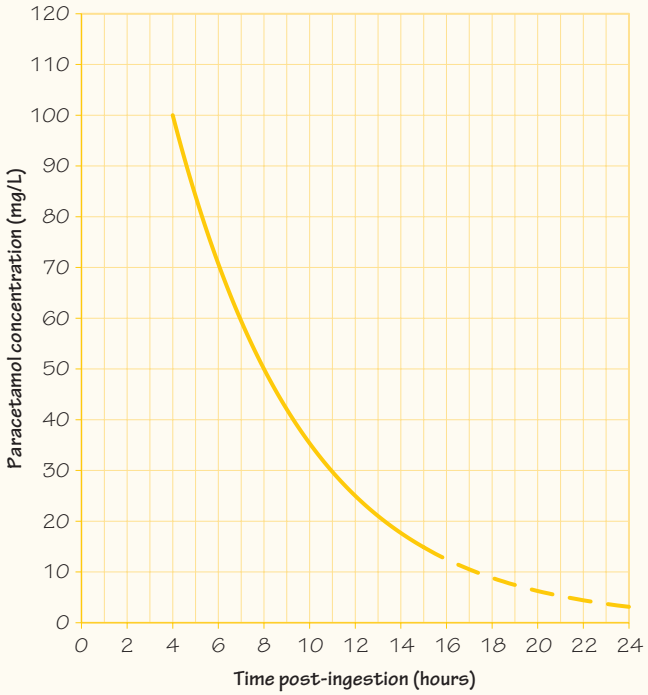

Figure 8.1 Paracetamol poisoning treatment graph.

9 A 59-year-old man with acute pulmonary oedema

Patient name: Joel Jones
ID number: 100009
Date of birth: 07/05/1955
Age: 59 years
Weight: 82 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 12:00

History

PC Shortness of breath.

HPC Mr Jones complains of 3 days of worsening shortness of breath at rest, ankle swelling and fatigue. He is unable to sleep because of his shortness of breath, which is worse lying flat. He has had no chest pain. He has not been taking his 'water tablets' as he has been on holiday for the past week and forgot to take them with him.

PMH Chronic heart failure 3 years ago based on an echocardiogram, which showed that his left ventricular ejection fraction was 35%. Myocardial infarction 5 years ago, hypertension and high cholesterol.

DH Aspirin 75 mg daily, atorvastatin 40 mg daily, bisoprolol 2.5 mg daily, furosemide 80 mg daily (not taken for 7 days), ramipril 5 mg daily. Intolerances: none known.

SH He is an ex-smoker, with a 30 pack year history, and quit 5 years ago.

Examination

General He appears restless, anxious and short of breath.

Obs T 36.8°C, HR 108 beats/min regular, BP 160/100 mmHg, RR 28 breaths/min, SpO_2 90% breathing air.

CVS His JVP is raised at 6 cm above the level of the sternal notch. He has normal first and second heart sounds but an additional third heart sound. There are no murmurs. His liver is palpable 2 cm beneath the costal margin and there is swelling of his lower limbs to just below his knees.

RS Bilateral crackles to the midzones.

Investigations

For results of investigations, see Table 9.1.

Task

A diagnosis of acute pulmonary oedema is made. Prescribe appropriate treatment.

Table 9.1 Case 9 investigation results

Test	Value	Normal range
ECG	Rate 90 beats/min, sinus rhythm, no acute ischaemic changes	
CXR	Upper lobe diversion and Kerley B lines	
Na^+	138 mmol/L	135–145
K^+	4.0 mmol/L	3.5–4.7
Ur	7.8 mmol/L	2.5–8.0
Creat	90 μmol/L	60–110
eGFR	>60 mL/min/1.73 m^2	>60
BNP	1060 ng/L	<250

10 A 24-year-old woman with acute asthma

Patient name: Linda Powell
ID number: 100010
Date of birth: 15/08/1990
Age: 24 years
Weight: 70 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 10:00

History

PC Shortness of breath.

HPC Miss Powell has had a non-productive cough for 1 week. Over the past 2 days she has also found it difficult to breathe. She ran out of her 'preventer' inhaler 1 month ago and has not had time to get to the GP to replace it. Her previous best peak expiratory flow rate (PEFR) is 450 L/min. She reports no fevers or muscle aches and pains. You are the first doctor to see her.

PMH She has had asthma since the age of 8 but has never taken oral steroids or been admitted to hospital before. She also has hay fever.

DH Clenil Modulite® (beclometasone dipropionate) 100 micrograms/metered dose, two puffs inhaled twice daily; salbutamol aerosol inhaler 100 micrograms/metered dose, one or two puffs inhaled as required. Intolerances: none known.

SH Lives alone in a first floor flat, non-smoker.

Examination

General She is alert but is having difficulty completing sentences.

Obs T 36.5°C, HR 115 beats/min (regular), BP 125/90 mmHg, RR 28 breaths/min, SpO_2 93% breathing air.

RS Good respiratory effort, no cyanosis. Normal percussion note. Good air entry throughout chest with diffuse expiratory wheeze. PEFR 200 L/min.

Investigations

For results of investigations, see Table 10.1.

Miss Powell is diagnosed with an acute severe asthma attack and requires hospital admission.

Task

Write an appropriate admission drug chart to address her acute condition.

Table 10.1 Case 10 investigation results

Test	Value	Normal range
Hb	134 g/L	120–160 g/L
WCC	7.2 × 10^9/L	4.0–11.0 × 10^9/L
Eos	1.4 × 10^9/L	0.1–0.8 × 10^9/L
Plt	220 × 10^9/L	150–400 × 10^9/L
Ur	4.4 mmol/L	2.5–8.0 mmol/L
Creat	62 μmol/L	60–110 μmol/L
CRP	<4 mg/L	0–10 mg/L
CXR	Hyperinflation, no airspace abnormalities	

11 A 57-year-old man who has suddenly deteriorated

Patient name: Robert Allen
ID number: 100011
Date of birth: 04/03/1957
Age: 57 years
Weight: 73 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 14:10

History

PC Acutely distressed.

HPC Mr Allen presented to hospital about 3 hours ago with abdominal pain. He is suspected to have acute appendicitis. Treatment with intravenous fluid and antibiotics was started approximately 10 minutes ago, and arrangements are being made for his admission to a surgical ward. He has now become distressed. He says he feels light-headed, sick and, generally, 'like I'm going to die!'

PMH Hay fever.

DH Presently receiving intravenous (IV) infusions of a gelatin-based colloid (Gelofusine® 500 mL over 30 min) and co-amoxiclav (1.2 g in 20 mL water over 30 min).
Intolerances: none known.

SH Non-smoker, drinks alcohol socially (about 8 units per week).

Examination

General He is alert but appears anxious and distressed. The skin over the whole of his upper body appears flushed.

Obs T 38.2°C, HR 138 beats/min, BP 68/42 mmHg, RR 32 breaths/min, SpO_2 94% breathing high-flow oxygen via non-rebreathe mask.

Systems There is no stridor. Breath sounds can be heard bilaterally and there are no added sounds. His abdomen is tender but there is no guarding or rebound tenderness.

Investigations

Results from initial blood tests are not yet available.

Task

Document your immediate management of the situation on the prescription chart.

12 An 84-year-old man taking warfarin who has a headache

Patient name: James Fenton
ID number: 100012
Date of birth: 15/02/1930
Weight: 75 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 18:00

History

PC Mr Fenton is seen in the emergency department with a headache.

HPC At around 2pm, Mr Fenton was walking his dog when a deer ran in front of him. The dog gave chase and pulled him over. Mr Fenton banged the front of his head and he has had a gradually worsening headache ever since. He was warned when he started taking warfarin that should this ever happen, he should attend the emergency department immediately.

PMH Transient ischaemic attack (2007), type 2 diabetes mellitus (diet controlled) and atrial fibrillation.

DH Warfarin 3 mg daily (target INR 2–3; dosage stable over the past 3 years).
Erythromycin 500 mg four times daily for cellulitis of his left leg. Currently on day 7 of a 10-day course.
Intolerances: penicillin (anaphylaxis).

SH Mr Fenton lives alone with his dog.

Examination

Obs HR 96 beats/min, BP 135/65 mmHg, RR 14 breaths/min, SpO_2 98% breathing air.

Legs Left leg is cool with some desquamation over previous area of cellulitis, but no active inflammation.

NS No abnormal findings.

Investigations

For results of investigations, see Table 12.1.

The emergency medicine registrar has discussed the case with the neurosurgical team who feel that no operative intervention is currently required. The haematology registrar has advised reversal of warfarin to prevent further bleeding with prothrombin complex concentrate and vitamin K in accordance with BNF guidelines.

Task

Mr Fenton is now being admitted under the medical team. Write an admission drug chart to manage his subdural haematoma.

Table 12.1 Case 12 investigation results

Test	Value	Normal range
Hb	145 g/L	130–180
WCC	6.1×10^9/L	4.0–11.0
CRP	5 mg/L	<10
INR	6.9	0.8–1.1
CT brain	3 cm left-sided acute subdural haematoma overlying the parietal lobe. No mass effect. No subarachnoid or intraventricular blood	

13 A 66-year-old man with acute coronary syndrome

Patient name: Madhu Lakhani
ID number: 100013
Date of birth: 28/07/1948
Age: 66 years
Weight: 88 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 18:00

History

PC Chest pain.

HPC Three hours ago Mr Lakhani developed sudden onset, central, crushing chest pain that radiated to his left arm and lasted 30 minutes. This was associated with nausea and sweating.

PMH Type 2 diabetes mellitus 5 years, hypertension 10 years.

DH Ramipril 2.5 mg twice daily, metformin 500 mg twice daily.
Intolerances: none known.

SH He has smoked 10 cigarettes a day for the past 40 years.

Examination

General Uncomfortable and in pain.

Obs T 36.5°C, HR 90 beats/min, regular, BP 154/90 mmHg, RR 18 breaths/min, SpO_2 96% breathing air.

CVS Capillary refill time less than 2 seconds, JVP 2 cm above the sternal angle, normal heart sounds.

RS Normal breath sounds.

Investigations

For results of investigations, see Table 13.1.

Task

A diagnosis of acute coronary syndrome is made. Prescribe appropriate treatment.

Table 13.1 Case 13 investigation results

Test	Value	Normal range
Hb	130 g/L	130–180
WCC	8.2×10^9/L	4.0–11.0
Plt	240×10^9/L	150–400
INR	1.0	0.8–1.1
Na^+	140 mmol/L	135–145
K^+	4.0 mmol/L	3.5–4.7
Ur	7.5 mmol/L	2.5–8.0
Creat	80 μmol/L	60–110
eGFR	>60 mL/min/1.73 m^2	>60
Trop I	152 ng/L	0–50
Gluc (random)	7.8 mmol/L	3.9–7.8
ECG	90 beats/min, sinus rhythm, normal axis, normal QRS complexes, ST segment depression in leads V4 to V6	

14 A 67-year-old man with an exacerbation of COPD

Patient name: Roland Harrison
ID number: 100014
Date of birth: 13/07/1947
Weight: 59 kg
Admission date: 07/01/2015
Date/time seen: 07/01/2015 18:00

History

PC Shortness of breath.

HPC Over the past 3 days he has had a bad cough. His sputum has changed colour from grey to dark green. He has gone from being able to walk 100 yards to being breathless at rest.

PMH Chronic obstructive pulmonary disease (COPD) diagnosed 2013, ischaemic heart disease.

DH Tiotropium 18 micrograms one puff daily, Seretide 500 Accuhaler® one puff twice daily, salbutamol 100 micrograms two puffs as needed, aspirin 75 mg daily, simvastatin 20 mg daily.
Intolerances: none known.

SH He smokes 20 cigarettes per day.

Examination

General Short of breath at rest, pursed lip breathing.

Obs T 37.8°C, HR 110 beats/min, BP 136/88 mmHg, RR 28 breaths/min, SpO_2 92% breathing 28% oxygen via Venturi mask.

CVS Normal heart sounds.

RS Symmetrically reduced lung expansion, poor air entry, bilateral expiratory wheeze.

Investigations

For results of investigations, see Tables 14.1 and 14.2.

Task

A diagnosis of acute exacerbation of COPD is made. Prescribe appropriate treatment. Write appropriate admission medication on the drug chart provided for the management of Mr Harrison's acute and chronic conditions.

Table 14.1 Case 14 investigation results

Test	Value	Normal range
Hb	154 g/L	130–180
WCC	17.2×10^9/L	4.0–11.0
Plt	233×10^9/L	150–400
Ur	3.4 mmol/L	2.5–8.0
Crea	98 μmol/L	60–110
CRP	28 mg/L	<10
CXR	Hyperinflated lungs, no consolidation	

Table 14.2 Case 14 arterial blood gas results while breathing 28% oxygen via Venturi mask

Test	Value	Normal range
pH	7.39	7.35–7.45
PaO_2	8.8 kPa	10.6–14.5
$PaCO_2$	6.3 kPa	4.0–6.0