SELF-ASSESSMENT QUESTIONNAIRE

Intensive care medicine

Ten self-assessment questions (SAQs) based on the published articles will appear at the end of each CME specialty featured in *Clinical Medicine*. The questions have been validated for the purpose of CME by independent experts. Two (2) CME credits will be awarded to those achieving 80% correct answers. This opportunity is open only to RCP Fellows and Collegiate Members in the UK who are registered for CME*.

A loose leaf answer sheet is enclosed, which will be marked electronically at the Royal College of Physicians. **Answer sheets must be returned by 15 May 2002** to:

CME Department (SAQs),
Royal College of Physicians,
11 St Andrews Place,
London NW1 4LE.

Correct answers will be published in the next issue of *Clinical Medicine*.

* Further details on CME are available from the CME department at the Royal College of Physicians (address above or telephone 020 7935 1174 extension 306 or 309).

Guidelines on completing the answer sheet

Your completed answer sheet will be scanned to enable a quick and accurate analysis of results. To aid this process, please keep the following in mind:

1 Please print your GMC Number firmly and neatly
2 Only write in allocated areas on the form
3 Only use pens with black or dark blue ink
4 For optimum accuracy, ensure printed numbers avoid contact with box edges
5 Please shade circles like this: ● Not like this: ✓
6 Please mark any mistakes made like this: ✗
7 Please do not mark any of the black squares on the corners of each page
8 Please fill in your full name and address on the back of the answer sheet in the space provided; this will be used to mail the form back to you after marking.

Q1 The pulmonary artery catheter allows direct measurement of:

a) Cardiac output
b) Stroke volume
c) Preload
d) Systemic vascular resistance
e) Contractility of the heart

Q2 The pulmonary artery wedge pressure is a useful estimate of preload in:

a) Mitral stenosis
b) Pulmonary hypertension
c) All critically ill patients
d) Hypovolaemic shocke)
e) Acute myocardial infarction

Q3 The following are causes of a normal anion gap metabolic acidosis:

a) Diabetic ketoacidosis
b) Excess chloride infusion
c) Lactic acidosis
d) Salicylates
e) Diarrhoea

Q4 In the recognition of acutely sick patients:

a) Respiratory rate is a highly sensitive sign in predicting underlying physiological disturbance
b) The most common signs evident prior to cardiac arrest are tachycardia and hypotension
c) Warning signs prior to cardiac arrest are present in only 25% of patients before the event
d) A base excess more negative than –4 mmol/l on arterial blood gas analysis is associated with a mortality of 50–60%
e) The degree of derangement in the base excess correlates with fluid requirements in acutely sick patients

Q5 A 50-year-old man is brought into A&E with a past history of chronic obstructive pulmonary disease. His wife gives a history of three days of cough and fever, with him becoming increasingly confused. On arrival, he opens his eyes spontaneously, localises to pain and verbalises incoherently. He has a temperature of 38.2°C, blood pressure 100/60 mmHg, heart rate 110 beats/min in sinus rhythm, respiratory rate 25 breaths/min and oxygen saturations 80% on air. There is bronchial breathing at the right base and no other localising signs.

a) Immediate endotracheal intubation is indicated
b) A chest x-ray would be the most useful investigation at this stage
c) There is no indication for fluid therapy
d) 24% oxygen should be administered with a venturi face mask
e) Arterial blood gases are mandatory

Q6 When resuscitating a shocked patient, adequate levels of oxygen delivery can be assessed by:

a) Blood pressure
b) Arterial lactate concentration
c) Mixed venous oxygen saturation
d) Urine output, if no evidence of acute renal failure
e) Cardiac output

Q7 A 58-year-old man is admitted with an acute abdomen and a history of heavy alcohol abuse. A diagnosis of acute pancreatitis is made and he is admitted to a surgical ward. Initial observations shows heart rate 110 beats/min, blood pressure 100/60 mmHg, and arterial blood gas analysis demonstrates a PaO_2 of 10 kPa and a $PaCO_2$ of 3.3 kPa on air. Six hours after admission the surgical SHO is called because he has developed respiratory distress. Repeat blood gas analysis shows a PaO_2 of 8 kPa on 100% oxygen. He is transferred to the intensive care unit for further management.

a) The PaO_2/FiO_2 ratio of 8 suggests a diagnosis of acute respiratory distress syndrome (ARDS)

b) ARDS characteristically causes bilateral infiltrates on chest x-ray

c) A pulmonary artery catheter is essential to confirm the diagnosis of ARDS

d) Pancreatitis is a known precipitant of ARDS

e) The prognosis is not affected by the precipitating cause

Q8 The management principles of invasive ventilation of a patient with ARDS include:

a) Adjusting the mechanical ventilation to maintain a normal $PaCO_2$

b) Aiming to achieve tidal volumes of 12–15 ml/kg

c) The use of bicarbonate to correct severe acidosis is contraindicated

d) Positive end expiratory pressure has been shown to be of no benefit

e) The ventilation rate should be kept below 30 breaths/min

Q9 A 67-year-old man is admitted to the intensive care unit (ICU) having had a short witnessed cardiac arrest (ventricular fibrillation), which is terminated after the third delivered shock. He is intubated, ventilated and requires inotropic support. On examination, he is cold at the peripheries, but the examination is otherwise unremarkable. He has 200 ml of urine in his catheter bag. Investigations: Na 130 mmol/l; K 6.8 mmol/l; U 20.8 mmol/l; Cr 234 µmol/l; AST 431 iu/l; ALP 76 iu/l; bilirubin 9 µmol/l; CK 2,400 mmol/l; pH 7.1; PaO_2 12 kPa; $PaCO_2$ 7 kPa; HCO_3 16; BXS –9 mmol/l; lactate 5.5 mmol/l; Hb 13.8 g/l; WCC 14.8; Plt 39; INR 1.5.

a) The senior house officer should start a frusemide infusion to treat the hyperkalaemia and acute renal failure (ARF)

b) On the evidence available, he should receive emergency haemodialysis

c) Anticoagulation should be provided using heparin

d) By day 3, it is still appropriate to withhold nutrition to avoid the risks of fluid overload

e) By day 10, although the patient is otherwise well, he has still not recovered renal function. It is now probable that he will not recover renal function and will therefore need long-term renal support

Q10 A 42-year-old playwright is admitted to the surgical ward with alcohol-induced pancreatitis. Over the next 72 hours the abdominal pain increases and his condition deteriorates. When reviewed by the house surgeon he is found to be incoherent, confused, with marked tachycardia and tachypnoea. BP 95/65 mmHg; JVP 0 at sternal angle. His urine output is 61 ml for the last two hours. Initial investigations reveal a macrocytosis but an otherwise normal full blood count and a mildly elevated INR of 1.5. Electrolytes: Na 121 mmol/l; K 3.1 mmol/l; urea 3.9 mmol/l; Cr 120 µmol/l; AST 145 iu/l; Alb 24 g/l. Arterial blood gases: pH 7.1; PaO_2 7 kPa; $PaCO_2$ 2.4 kPa; HCO_3 14 mmol/l; BXS –10; lactate 3.5 mmol/l.

a) This patient requires admission to the ICU

b) To prevent ARF, a dopamine infusion should be commenced immediately

c) Urine biochemistry reveals a urinary Na of 8 mmol/l and a urinary creatinine to plasma ratio of above 50. These results support pre-renal ARF

d) His urine output deteriorates in the three hours after arrival in the ICU (21, 30, 14 ml/hour). Early continuous veno-venous haemofiltration is warranted

e) The patient's clinical state deteriorates requiring intubation and ventilation. A chest x-ray reveals pulmonary oedema. The patient should be changed to haemodialysis enabling removal of extravascular fluid

CME Dermatology SAQs

Answers to the CME SAQs published in *Clinical Medicine* January/February 2002

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
a) T	a) T	a) T	a) F	a) T	a) F	a) T	a) F	a) F	a) F
b) F	b) T	b) T	b) T	b) T	b) F	b) T	b) F	b) T	b) F
c) F	c) T	c) F	c) T	c) F	c) T	c) T	c) F	c) F	c) F
d) T	d) F	d) T	d) T	d) F	d) F	d) F	d) F	d) F	d) T
e) F	e) F	e) T	e) F	e) T	e) T	e) F	e) T	e) T	e) T