

Intensive care medicine

SELF-ASSESSMENT QUESTIONNAIRE

SAQs – and answers – are ONLINE for RCP Fellows and Collegiate Members

The SAQs printed in the CME section can be answered online to achieve External CPD credits.

The answering process

1. To access the questions, log on to the Fellows and Members area <http://www.rcplondon.ac.uk/Members/SAQ> (those who have not yet registered will be automatically directed to the registration pages)
2. Select: **Online learning SAQ**
3. At the top of the SAQ page select the current CME question paper
4. Answer all 10 questions in any order, by indicating true or false
5. Check your answers and change them if you wish to
6. Click on **Submit for final marking**.
(Note – after submitting your answers NO changes are possible)

The marking process

- You must submit the answers before the closing date shown at the top of the screen
- Answers will be marked automatically on the date displayed for that paper
- You can find your marks with explanations of the answers on the CME page under **My past CME papers**

Registering your External CPD credits

A pass mark of 80% allows you to claim 2 External CPD credits. Thus by answering the SAQs in each issue of *Clinical Medicine* you can achieve 12 external credits in one year.

To claim your credits:

- Online registrants: You can record your credits using the online diary system. All Clinical Medicine SAQs are listed under External Approved CPD
- Manual registrants: You can record your credits using your paper diary sheets. Manual registrants are required to keep evidence of their participation in the SAQ and the score attained.

Please note that past papers will be stored for 12 months.

For those who wish to submit their answers on paper, please see guidance at the end of these SAQs.

- 1 A 60-year-old male smoker is referred from accident and emergency (A&E) with a two-day history of increasing shortness of breath and productive cough. There is no other past history and he lives alone independently. On examination, he is alert but working hard with accessory muscle activity, a respiratory rate of 40/min and oxygen (O₂) saturation of 82% on 2 l/min O₂. There are reduced breath sounds throughout the chest. Arterial blood gases are pH 7.25, pO₂ 6.5, pCO₂ 12.7, HCO₃ 39, base excess (BE) –4.0. Chest X-ray (CXR) shows hyperinflated lungs. Despite nebulised bronchodilators, he deteriorates and is intubated in A&E. He is difficult to ventilate, with high inspiratory pressures and FiO₂ above 0.7 to maintain pH 7.45, pO₂ 8 and pCO₂ 5.6. Which of the following statements are true and which false?
 - (a) A trial of non-invasive ventilation (NIV) first would have been more appropriate
 - (b) Aggressive attempts at weaning should be undertaken once the patient is in the intensive care unit (ICU)
 - (c) Sedation should be interrupted
 - (d) Early tracheostomy should be performed
 - (e) Urgent repeat CXR should be undertaken
- 2 The patient improves over the next five days. Sedation is stopped and he is cooperative, FiO₂ is weaned to 0.40, he begins to make spontaneous respiratory effort and is switched to pressure support ventilation. However, he develops a rapid shallow breathing pattern overnight with associated tachycardia and agitation. Which of the following statements are true and which false?
 - (a) He should be re-sedated immediately
 - (b) The pressure support level should remain unaltered so that ground is not lost in the weaning process
 - (c) Another attempt at reducing

- pressure support should be made within the next 24 hours
- (d) A spontaneous breathing trial should be attempted
- (e) An urgent CXR should be performed
- 3** At three weeks, the patient can tolerate only one minute of a spontaneous breathing trial when his f/Vt ratio is below 100/s/l, but is stable otherwise. FiO₂ is 0.28, low levels of pressure support are being given via a tracheostomy, nasogastric feed is established and he is sitting out for short periods. Which of the following management options should be undertaken?
- (a) Extubation
- (b) Extubation on to NIV
- (c) Echocardiography
- (d) Referral to the regional weaning centre
- (e) A course of oral steroids
- 4** A 75-year-old man with known chronic obstructive pulmonary disease is admitted on medical take in respiratory failure. NIV is commenced; despite this, he worsens with a rising respiratory rate and PaCO₂. He is intubated and ventilated in the intensive care unit (ICU). Which of the following statements are true and which false?
- (a) He is unlikely to survive the hospital admission
- (b) Only a low FiO₂ should be given to avoid further rises in PaCO₂
- (c) A prolonged expiratory time setting on the ventilator may be required
- (d) The risks of tracheostomy outweigh the likely benefits and tracheostomy should be delayed
- (e) Hypotension following intubation is usually caused by intrinsic cardiac disease
- 5** A previously fit 23-year-old woman is admitted to A&E with an eight-hour history of an initial 'flu-like' illness followed by rigors and confusion. On arrival her respiratory rate is 28/min, blood pressure (BP) 80/30 mmHg, pulse rate 142 beats/min and Glasgow Coma Scale 11/15. Which of the following statements are true and which false?
- (a) Antibiotics should be withheld until a definite microbiological diagnosis is established
- (b) Central venous O₂ tension will initially be low
- (c) Inotropic support should be started immediately
- (d) Initial volume resuscitation does not require central venous monitoring
- (e) The choice of resuscitation fluid (crystalloid or colloid solution) is irrelevant to outcome
- 6** An 82-year-old man with chronic urinary retention is referred to the outreach team because of hypotension and fever. He has an indwelling urinary catheter and ward staff have noted that his urine has been 'cloudy' since admission. On examination he has widespread petechiae and, following central line insertion, there is continuing bleeding around the puncture site. Which of the following statements are true and which false?
- (a) His platelet count is likely to be elevated
- (b) His activated thromboplastin time will be below normal
- (c) Fibrin degradation products will be elevated
- (d) A blood film will show red cell fragments
- (e) Circulating levels of activated protein C (aPC) will be elevated
- 7** A 75-year-old man is admitted to ICU following emergency laparotomy for abdominal pain. At surgery, faecal peritonitis is found from a perforated diverticulum. He is ventilated on admission, needing an FiO₂ of 0.8 to maintain 92% O₂ saturation. He also requires inotropic support and urine output falls to an average of 10 ml/hour. Which of the following measures are likely to improve outcome?
- (a) High-dose steroids (eg intravenous (iv) methyl prednisolone 1 g)
- (b) Low-dose steroids (eg iv hydrocortisone 100 mg)
- (c) Recombinant aPC
- (d) Recombinant anti-endotoxin antibody
- (e) Antithrombin III replacement
- 8** A 67-year-old man is admitted to the ICU having undergone emergency laparotomy and oversewing of a perforated duodenal ulcer. He has a past history of hypertension and gout, which has recently been active. His urine output has dwindled to only 6 ml in the preceding hour and his serum creatinine risen overnight from normal to 176 µmol/l. He is intubated and ventilated. His central venous pressure is equivalent to 7 cm H₂O and mean arterial pressure is 67 mmHg. His chest is clear with good gas exchange. Bowel sounds are absent and his abdomen is slightly distended. Which of the following statements are true and which false?
- (a) He is adequately filled so is likely to have progressed to acute tubular necrosis (ATN)
- (b) His fractional excretion of sodium of 1.5% is compatible with prerenal acute renal failure (ARF)
- (c) Restoration of renal perfusion in ATN restores organ function
- (d) Maintenance of adequate renal perfusion is needed once ATN is established
- (e) Urinalysis may be useful in differentiating prerenal ARF from ATN
- 9** A 52-year-old woman is admitted to the critical care unit with type 1 respiratory failure secondary to a severe community-acquired pneumonia for which she is already receiving high-dose amoxicillin from her general practitioner. She initially required continuous positive airway pressure and a combination of high-dose iv cephalosporin and clarithromycin (subsequently rationalised for the pneumococcus grown on sputum culture). Her respiratory

status slowly improves such that she is on face-mask O₂ by day 3 of her admission. She is haemodynamically stable and her urine output is satisfactory with maintenance iv fluid replacement of over 2 l/day. Unfortunately, her serum creatinine, although initially normal, rose to 153 µmol/l on day 4 and continued to rise at around 50–70 µmol/l/day. Which of the following statements are true and which false?

- (a) Her antibiotic dosing should be reviewed in line with her level of renal function
- (b) Renal failure is likely to be due to septic ATN
- (c) Urinalysis is indicated
- (d) Renal biopsy is indicated
- (e) Persistence of presumed ATN beyond 2–3 weeks should always prompt investigation for an alternative diagnosis

10 A 75-year-old man with type 2 diabetes mellitus, hypertension and stable angina developed a florid salmonella gastroenteritis whilst on holiday. He had failed to keep up with his fluids and had continued to take his metformin and perindopril. On admission he is clinically dehydrated, hypotensive (BP 103/64 mmHg) and oliguric. His serum creatinine is 296 µmol/l and serum potassium 5.7 mmol/l. Unfortunately, he has a witnessed cardiac arrest soon after arrival in A&E, but was resuscitated after three cycles of basic life support and 500 ml iv colloid resuscitation. His post-arrest BP (96/53 mmHg) improved to 115/76 mmHg with further fluid resuscitation but his arterial blood gases revealed a metabolic acidosis (pH 7.25, BE -8 mmol/l, PaCO₂ 2.6 kPa, hyperkalaemia 7.5 mmol/l and hyperlactataemia 7 mmol/l). Which of the following statements are true and which false?

- (a) First-line treatment should include iv calcium gluconate,

iv dextrose-insulin and iv sodium bicarbonate

- (b) Renal replacement therapy (RRT) is indicated upon arrival on the ICU
- (c) The RRT modality of choice is continuous veno-venous haemofiltration
- (d) The need for RRT establishes the diagnosis of ATN
- (e) Perindopril is contraindicated lifelong, even after recovery

Guidelines on completing the answer sheet for those who wish to submit their answers on paper

A loose leaf answer sheet is enclosed, which will be marked electronically at the Royal College of Physicians. **Answer sheets must be returned by 21 November 2005** to: CME Department (SAQs), Royal College of Physicians, 11 St Andrews Place, London NW1 4LE.

Overseas members only can fax their answers to 020 7487 4156
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).

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.

CME Haematology SAQs

Answers to the CME SAQs published in *Clinical Medicine* July/August 2005

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