

Paper 1

Questions

Multiple True False (MTF) questions — select true or false for each of the five stems.

1 Guillain-Barré syndrome (GBS):

- a. Affects more females than males.
- b. Is a disease of the middle-aged.
- c. When secondary to a respiratory illness, the majority of cases present within a month.
- d. The presence of cranial nerve signs effectively rules out the diagnosis.
- e. The most common associated pathogen is *Clostridium perfringens*.

2 In the trauma patient with massive haemorrhage, the following statements are correct:

- a. An initial target systolic blood pressure of 80-90mmHg is recommended for the patient without brain injury.
- b. Desmopressin at a dose of 0.3µg/kg is recommended in the bleeding patient taking platelet-inhibiting drugs.
- c. Recombinant factor VIIa (rFVIIa) can be considered as a rescue measure provided the platelet count is greater than $30 \times 10^9/L$.
- d. Pre-injury warfarin use doubles the odds of death for trauma patients with blunt head injury.
- e. Antifibrinolytic drugs recommended for use in the bleeding major trauma patient include tranexamic acid, aprotinin and aminocaproic acid.

3 The following drugs undergo non-organ metabolism:

- a. Esmolol.
- b. Atracurium.
- c. Inhaled nitric oxide.
- d. Propofol.
- e. Adrenaline.

4 Which of the following features of an asthma attack are classified as 'life-threatening' in the 2011 BTS asthma guideline?

- a. Inability to complete sentences in one breath.
- b. PaO_2 of $>8\text{kPa}$.
- c. Silent chest.
- d. $\text{PaCO}_2 >6\text{kPa}$.
- e. Peak expiratory flow rate (PEFR) $<50\%$ of predicted.

5 With regard to bleeding and coagulopathy in the critically ill patient:

- a. If a platelet transfusion is indicated, 1 unit will raise the count by approximately $20 \times 10^9/\text{L}$.
- b. The principal constituents of cryoprecipitate include Factors VIII, XIII, vWF, fibronectin and fibrinogen.
- c. A suggested dose of fresh frozen plasma in the bleeding trauma patient with coagulopathy is 30ml/kg .
- d. Desmopressin at a dose of $0.3\mu\text{g/kg}$ is a useful treatment in patients with coagulopathy related to uraemia, cirrhosis and aspirin use.
- e. At temperatures of $33\text{--}35^\circ\text{C}$, altered enzyme kinetics equate to a 33% reduction in normal clotting factors.

6 Regarding drug-receptor interactions:

- a. An antagonist has receptor affinity and intrinsic activity.
- b. Increasing the dose of a partial agonist can elicit a maximal effect.
- c. β -receptor blockers are reversible antagonists.
- d. Flumazenil is an inverse agonist.
- e. Phenoxybenzamine is an irreversible antagonist at α -adrenoceptors.

7 Regarding the hepatorenal syndrome (HRS):

- a. It is commonly over-diagnosed in patients with cirrhotic liver disease.
- b. HRS Type 1 has the poorest outcome.
- c. Kidneys from patients with HRS are suitable for transplantation.
- d. The condition is associated with splanchnic vasodilatation.
- e. Terlipressin must be given by infusion.

8 With regard to a patient with a neuromuscular disorder on the critical care unit:

- a. Potassium-sparing diuretics should be avoided in patients with hypokalaemic periodic paralysis.
- b. Suxamethonium use should be avoided in patients with myasthenia gravis.
- c. Patients with motor neurone disease typically require double the standard dose of suxamethonium to provide optimum intubating conditions.
- d. Local anaesthesia can exacerbate symptoms of multiple sclerosis.
- e. In Guillain-Barré syndrome, non-depolarising neuromuscular blocking drugs may be used, but should be significantly dose-reduced.

9 Regarding parenteral nutrition in the critically ill patient:

- a. A patient with enteral feeds running at 40ml/hr with 4-hourly aspirates of >200ml is deemed to be failing enteral nutrition.
- b. Daily caloric intake should be 100-130% of the patient's calculated daily energy expenditure.
- c. Parenteral nutrition can be administered peripherally.
- d. Approximately 1g/kg/day of nitrogen is required.
- e. Copper, zinc and selenium (trace elements) are present in commercially produced parenteral nutrition solutions.

10 A 67-year-old male has a diagnosis of myasthenia gravis (MG). Which of the following medications should be avoided to reduce the risk of exacerbation?

- a. Gentamicin.
- b. Paracetamol.
- c. Trimethoprim.
- d. Ciprofloxacin.
- e. Aspirin.

11 The following statements are true regarding the management of acute severe asthma:

- a. PEF <33% is a criterion diagnosis.
- b. Aminophylline should be given as a first-line intravenous bronchodilator.
- c. The use of IV magnesium sulphate to reduce mortality is supported by level I evidence.
- d. Ketamine 5mg/kg is the preferred induction agent if rapid sequence intubation is required.
- e. A restrictive fluid regime should be used in patients at risk of intubation.

12 Regarding the role of selective digestive tract decontamination (SDD) on the ICU:

- a. Eight potentially pathogenic micro-organisms are responsible for the majority of infections in critical care.
- b. SDD is 'selective' because it is anaerobe-sparing.
- c. Primary endogenous pathogens are targeted by intravenous antibiotics for the first 4 days.
- d. After 10 days potentially pathogenic micro-organisms have been eradicated and all antibiotics are stopped.
- e. There is level I evidence that SDD increases the prevalence of antibiotic resistance.

13 A 59-year-old male is admitted with a gradual onset of peripheral oedema and frothy urine. He is subsequently diagnosed with nephrotic syndrome. The condition is associated with:

- a. Hypercalcaemia.
- b. Venous thrombosis.
- c. Hyperlipidaemia.
- d. Risk of myocardial infarction.
- e. Hypervolaemia.

14 The following have been demonstrated to be useful prognostic variables in moderate to severe traumatic brain injury:

- a. Age.
- b. Pupillary reaction.
- c. Sensory neurological deficit.
- d. The presence of non-evacuated haematoma on CT brain scan.
- e. Serum glucose.