Multiple Choice Questions

Intensive care management of patients with haematological malignancy

1. The following are true of patients with neutropaenia or thrombocytopaenia:
   (a) In neutropaenia the white cell count will be less than 2 x10^9 litre^{-1}.
   (b) Bladder catheterization is contra-indicated in neutropaenic patients.
   (c) Neutropaenic patients should not be exposed to staff with active shingles.
   (d) Thrombocytopaenia can be caused by vancomycin.
   (e) Patients who require platelet transfusions should have their platelet count checked after 24 h in case HLA-matched platelets are required.

2. Regarding tumour lysis syndrome:
   (a) Rasburicase or allopurinol may be used to treat patients with tumour lysis syndrome.
   (b) Serum hyperphosphataemia, hypercalcaemia and hyperuricaemia are common.
   (c) It often presents with acute hyperkalaemia which may require renal replacement therapy.
   (d) Fluid restriction is often required.
   (e) It is most commonly seen after stem cell transplantation.

3. Regarding infections in patients with haematological malignancy:
   (a) Neutropaenic enterocolitis (typhlitis) has similar presenting features to *Clostridium difficile* colitis.
   (b) Pneumonia can be present without classical X-ray appearances.
   (c) Pneumonia requiring endotracheal intubation and mechanical ventilation is predictive of poor outcome.
   (d) Antimicrobials which are active against *Pseudomonas* species should be part of the empirical treatment of pneumonia.
   (e) Broncho-alveolar lavage should be considered in patients with suspected pneumonia which does not improve after antimicrobial therapy.

4. Graft versus host disease:
   (a) With severe skin involvement is a contra-indication to parenteral nutrition because of the risk of line infection.
   (b) Can cause thrombocytopaenia.
   (c) Is more common where donor and recipient are of different genders.
   (d) Can be graded for severity according to skin, liver and gut involvement.
   (e) Is a common cause for intensive care unit (ICU) admission within the first 10 days of stem cell transplantation.

Paediatric neuroanaesthesia

5. Compared with the adult population:
   (a) Neonates have a higher cerebral blood flow (CBF).
   (b) Children have a higher cerebral metabolic rate for oxygen ($CMRO_2$).
   (c) Moderate hypocapnia in the neonate has a greater effect on CBF.
   (d) CBF is not affected by cerebral perfusion pressure in young children.
   (e) Accurate values for autoregulatory ranges for CBF in neonates are unavailable.

6. In the paediatric population:
   (a) The anterior fontanelle closes at around 1 year to 18 months.
   (b) All cranial sutures will be closed by 2 years.
   (c) Cranial enlargement is often a sign of raised intracranial pressure (ICP) in older children.
   (d) The majority of intracranial tumours arise infratentorially.
   (e) Acute increases in ICP can be compensated for by an increase in skull size.

7. Regarding paediatric neurosurgical pathology:
   (a) Closure of neonatal lumbosacral meningocele is an emergency procedure.
   (b) Myelodysplasia is no longer thought to be associated with latex allergy.
   (c) Chiari malformation is associated with hydrocephalus in fewer than 50% of cases.
   (d) Craniopharyngioma is the most common intracranial tumour.
   (e) Posterior fossa tumours are more likely to be associated with raised ICP.

8. Surgical repair of craniosynostosis:
   (a) Most commonly takes place between the ages of 5 and 10 years.

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(b) Often requires blood transfusion.
(c) If it involves mid face anomalies, should ideally be carried out at a supraregional centre.
(d) If it involves a single suture, is often performed in children with a craniofacial syndrome.
(e) Requires invasive cardiovascular monitoring.

Anaesthetic implications of psychoactive drugs

9. Tricyclic antidepressants (TCAs):
(a) May cause arrhythmias.
(b) Enhance uptake 1.
(c) May cause hypotension.
(d) Raise the seizure threshold.
(e) May cause anticholinergic side-effects.

10. Drugs that should be avoided in patients taking monoaminoxidase inhibitors (MAOIs) include:
(a) Ephedrine.
(b) Pethidine.
(c) Morphine.
(d) Bupivacaine with 1:200 000 adrenaline.
(e) Ketamine.

11. Selective serotonin reuptake inhibitors:
(a) May impair platelet function.
(b) Are a contraindication to use of pethidine.
(c) May cause the serotonergic syndrome when administered with tramadol.
(d) Inhibit presynaptic serotonin reuptake.
(e) Are generally not stopped before elective surgery.

12. The following are known side-effects of antipsychotic drugs:
(a) Tardive dyskinesia.
(b) Parkinsonian symptoms.
(c) Urinary retention.
(d) Diarrhoea.
(e) Precipitation of neuroleptic malignant syndrome.

Nerve blocks of the anterior abdominal wall

13. Regarding abdominal wall anatomy:
(a) The nerve supply to the umbilicus is the posterior rami of T10.
(b) Transversus abdominis is the most superficial muscle.
(c) The transversus abdominis plane is between the transversus abdominis muscle and the external oblique muscle.
(d) The arcuate line is found one third of the distance from the umbilicus to the pubic crest.
(e) The rectus abdominis is divided by the linea alba.

14. Regarding rectus sheath block:
(a) The depth of the rectus sheath can be accurately predicted.
(b) Local anaesthetic is placed at the posterior wall of the rectus abdominis.
(c) Local anaesthetic will not spread through the sheath due to tendinous intersections.
(d) Complications include puncture of inferior epigastric vessels.
(e) It is suitable for catheter insertion to provide prolonged analgesia.

15. Regarding ilioinguinal nerve block:
(a) The ilioinguinal nerve originates from the L1 nerve root.
(b) The iliohypogastric nerve originates from the L2 nerve root.
(c) The ilioinguinal nerve supplies the skin over the umbilicus.
(d) It has a success rate of over 90%.
(e) Femoral nerve block may be a complication.

16. Regarding transversus abdominis plane (TAP block):
(a) Ultrasound cannot be used for this block.
(b) It provides analgesia for visceral abdominal pain.
(c) Injection into the peritoneal cavity may result in a prolonged block.
(d) Low volume and high concentrations of local anaesthetic are recommended.
(e) The triangle of Petit is bounded by the external oblique, the iliac crest and lattissimus dorsi muscle.

Antiplatelet drugs, coronary stents and non-cardiac surgery

17. Regarding antiplatelet agents used in cardiology:
(a) Both aspirin and clopidogrel are prodrugs.
(b) The duration of action of aspirin and clopidogrel is 5–10 days.
(c) Cangrelor is a reversible short-acting thienopyridine.
(d) Cangrelor may be suited to bridging therapy in situations when long-acting thienopyridines must be stopped before non-cardiac surgery.
(e) The antiplatelet activity of tirofiban and eptifibatide lasts 24 h after cessation of therapy.

18. Regarding percutaneous coronary intervention (PCI):
(a) The number performed annually exceeds the number of coronary artery bypass grafts 3-fold.
(b) Bare metal stents have reduced the incidence of stent re-stenosis compared with drug-eluting stents.
(c) Drug-eluting stents have reduced the incidence of late stent thrombosis compared with bare metal stents.
(d) Drug-eluting stents slowly release antiplatelet drugs to prevent late stent thrombosis.
(e) After insertion of a drug-eluting stent, patients are required to take aspirin for life and clopidogrel for at least 12 months.

19. In non-cardiac surgery after stent insertion:
    (a) Surgery should be delayed at least 6 weeks after insertion of a bare metal stent.
    (b) Surgery should be delayed at least 12 weeks after drug-eluting stent insertion.
    (c) After recent stent insertion, withdrawal of all anti-platelet agents increases the relative risk of coronary thrombosis by 90:1.
    (d) Clopidogrel use has been shown to increase perioperative morbidity in most surgical procedures because of bleeding.
    (e) Clopidogrel should be stopped at least 5 days before spinal or neurosurgery.

20. Regarding perioperative monitoring of antiplatelet agents:
    (a) The R time of a thromboelastogram is the most useful parameter when monitoring platelet function.
    (b) Thromboelastography is a suitable tool for monitoring the antiplatelet effects of aspirin and clopidogrel.
    (c) Modified thromboelastography is a suitable tool for monitoring the antiplatelet effects of GPIIb/IIIa inhibitors.
    (d) Optical platelet aggregometry is a useful point-of-care clinical test.
    (e) Modified thromboelastography may be used to monitor the antiplatelet effects of cangrelor.

Anaesthesia for electroconvulsive therapy

21. Physiological responses to electroconvulsive therapy (ECT) include:
    (a) An early sympathetic discharge lasting 10–15 s.
    (b) 30–40% increases in systolic blood pressure.
    (c) A short-lived reduction in ventricular function.
    (d) An increase in intracranial pressure.
    (e) A decrease in tissue oxygen consumption.

22. Regarding long-term effects of ECT:
    (a) Mortality is around 1 in 8000 procedures.
    (b) Short-term memory impairment only occasionally lasts more than a few weeks.
    (c) ECT commonly affects non-memory cognitive functions (e.g.) intelligence, judgement).
    (d) Anterograde and retrograde amnesia can occur.
    (e) Joint dislocations are a major cause of morbidity.

23. Regarding anaesthesia technique:
    (a) Etomidate is associated with longer seizure duration.
    (b) Neuromuscular blocking agents should be avoided because of effects on seizure activity.
    (c) Glycopyrrolate is preferred over atropine.
    (d) Bite blocks should be avoided because of the risk of trauma.
    (e) Hyperventilation lowers the seizure threshold.

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