a) List 3 possible pathophysiological changes in the lungs seen in asthma. (3 marks)

1. ……………………………………………………………………………………………………………………………..

2. ……………………………………………………………………………………………………………………………..

3. ……………………………………………………………………………………………………………………………..

A 57 year old female, who is known to have asthma, is having a laparoscopic cholecystectomy under general anaesthetic with endotracheal intubation.

b) Interpret her preoperative pulmonary function tests shown below. (2 marks)

Age: 57    Weight: 62kg    Height: 165cm

<table>
<thead>
<tr>
<th></th>
<th>Predicted</th>
<th>Observed - pre bronchodilator</th>
<th>% Predicted</th>
<th>Observed – post bronchodilator</th>
<th>% Predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEV₁ (L)</td>
<td>2.42</td>
<td>1.45</td>
<td>60</td>
<td>2.06</td>
<td>80</td>
</tr>
<tr>
<td>FVC (L)</td>
<td>3.26</td>
<td>2.75</td>
<td>90</td>
<td>3.10</td>
<td>95</td>
</tr>
<tr>
<td>FEV₁ / FVC (%)</td>
<td>53%</td>
<td></td>
<td>67%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
c) List 6 factors that may cause her to develop bronchospasm during her general anaesthesia. (6 marks)

1. ..........................................................................................................................

2. ..........................................................................................................................

3. ..........................................................................................................................

4. ..........................................................................................................................

5. ..........................................................................................................................

6. ..........................................................................................................................

d) She does develop acute severe bronchospasm - what drugs, including dosages where applicable, can be used to treat this? (5 marks)

..........................................................................................................................

..........................................................................................................................

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e) List 4 other actions you would take in the early management of this emergency? (4 marks)

1. ..........................................................................................................................

2. ..........................................................................................................................

3. ..........................................................................................................................

4. ..........................................................................................................................
<table>
<thead>
<tr>
<th>Q</th>
<th>Answer</th>
<th>Guidance</th>
</tr>
</thead>
</table>
| a | Chronic inflammation  
Mucosal oedema  
Excess mucous production  
Bronchial smooth muscle contraction & hypertrophy  
Infiltration of inflammatory cells | Accept epithelial damage, loss of cilia  
Don’t accept airway hyper-reactivity (it’s a consequence)  
Max 3 marks  
Accept mast cells, macrophages, eosinophils, goblet cells |
| b | Reduced FEV1/FVC ratio = obstructive  
Evidence of reversibility | 1 mark (must say obstructive picture)  
1 mark  
No mark for stating reduce FEV<sub>1</sub> |
| c | Airway manipulation  
Anaphylactic/anaphylactoid reactions  
Histamine release from i.v.drugs  
Inadequate depth of anaesthesia  
Aspiration  
Administration of anticholinesterase reversal  
Administration of other drugs  
Pre-existing infection  
Pre-op non compliance with asthma medication  
Use of desflurane | Accept use of ETT  
Accept surgical stimulation/pain if too light (only 1 mark for either statement)  
e.g. NSAIDs, B blocker |
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **d** | Increase inhaled volatile concentration  
Salbutamol (8-10 puffs into circuit, 2.5 - 5mg neb, 250mcg slow i.v.  
Aminophylline 5mg/kg slow i.v.  
Adrenaline 10-100mcg titrated  
Magnesium 1.2-2g i.v.  
Ketamine 1-3mg/kg/hr or 10-20mg bolus  
Hydrocortisone 100-200mg i.v.  
Ipratropium 500mcg neb. | No mark if says desflurane  
No mark for oxygen (does not treat bronchospasm)  
Accept 500mg  
No mark for anti-histamine |
| **e** | Call for help  
Alert surgeon/stop surgery/deflate abdomen  
Increase FiO₂  
Assess ventilation  
Adjust ventilation - increase I:E ratio, use pressure control ventilation  
Auscultate chest – exclude pneumothorax |  
Accept 100% O₂  
Accept manual ventilation  
Must state what adjustment is made, allow 1 mark if says increase RR |
Syllabus | PR_IK_20; POM_IS_01
---|---
Question type | Hard ;pass mark 10
Topic | Perioperative management of cognitive dysfunction
Aim | Management of patient with dementia in relation to anaesthesia
Pass requirements | Should know the classes of drugs and potential interactions. Should also be aware of ways of avoiding postoperative delirium and the importance of doing so.

**a)**
List 2 of the main clinical features used to confirm a diagnosis of dementia. (2 marks)

1. .................................................................
2. .................................................................

**b)**
Name 2 of the most common types of dementia in the UK. (2 Marks)

1. .................................................................
2. .................................................................

**c)**
You have been asked to see an 80 year old man in the pre-operative assessment clinic. He has a diagnosis of dementia and is taking Rivastigmine, Risperidone, Memantine and Ginko Biloba.

Complete the table by identifying which of his drugs belong to which category. (2 Marks)

<table>
<thead>
<tr>
<th>Drug category</th>
<th>Drug name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Acetylcholine esterase inhibitors</td>
<td></td>
</tr>
<tr>
<td>2. NMDA receptor antagonists</td>
<td></td>
</tr>
<tr>
<td>3. Herbal medicines</td>
<td></td>
</tr>
<tr>
<td>4. Atypical antipsychotics</td>
<td></td>
</tr>
</tbody>
</table>
**d)** Outline the potential adverse perioperative effects of each drug. (4 marks)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Potential adverse perioperative effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Ginko Biloba</td>
<td></td>
</tr>
<tr>
<td>2. Risperidone</td>
<td></td>
</tr>
<tr>
<td>3. Memantine</td>
<td></td>
</tr>
<tr>
<td>4. Rivastigmine</td>
<td></td>
</tr>
</tbody>
</table>

**e)** The patient is scheduled to undergo an operation under general anaesthetic.
Give 6 ways in which intraoperative anaesthetic care can help to prevent him developing post-operative delirium. (6 marks)

1. ...................................................................................................................
2. ....................................................................................................................
3. ....................................................................................................................
4. ....................................................................................................................
5. ....................................................................................................................
6. ....................................................................................................................
f) Why is it important to avoid post-operative delirium in this patient? (4 marks)

........................................................................................................................................
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<table>
<thead>
<tr>
<th>Q</th>
<th>Marking Guidance</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
</table>
| a | • Loss of cognitive function  
    • Memory loss  
    • Loss of social competence | Any 2 | Accept loss of executive functions or loss of frontal control |
| b | • Alzheimer’s disease  
    • Vascular dementia  
    • Dementia with Lewy Bodies | Any 2 | Accept multi-infarct dementia |
| c | 1. Rivastigmine  
    2. Memantine  
    3. Ginko Bilboa  
    4. Risperidone | 2 | No half marks so 1 mark for 2 correct answers |
| d | Potential adverse effect  
    1. Interfere with platelet function  
    2. Enhance side effects of anticholinergics and dopaminergic agonists  
    3. Enhances vasodilatation and hypotension caused by anaesthetic  
    4. Prolong the effect of depolarising and reduce or reverse the effect of non-depolarising muscle relaxants. Enhanced cholinergic effects. | 4 | |
| e | • BIS guided anaesthesia to reduce dosage  
    • Multimodal analgesia  
    • Use of supplemental regional blocks  
    • Avoid benzodiazepines  
    • Avoid anticholinergics  
    • Keep well hydrated  
    • Ensure physiological normality e.g. BP | 6 | Accept:  
    • Minimum possible dose of anaesthetic to avoid awareness instead of BIS  
    • Avoid opiates instead of multimodal analgesia  
    No marks for recovery as this is |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th>not intraoperative.</th>
</tr>
</thead>
</table>
| f | Prolongs hospital stay  
Increases complications  
Increases mortality  
Increases the progress of dementia | 4 | Accept: Increases falls or increases pneumonia instead of increases complications |
Syllabus | MT_IK_04, NA_IK_20, NA_IK_04
---|---
Question type | Moderate: pass mark 13
Topic | Head injury
Aim | Understanding of immediate and ICU management of closed head injury and its pathophysiology.
Pass requirements | Must know management in ED, physiological goals, some pathophysiology, CPP calculation and target.

You are called to the emergency department to assist with the management of a 34 year old gentleman who has sustained an isolated head injury following a road traffic accident, he requires an urgent CT scan. Upon arrival you find him to be restless, no eye opening to pain, making incomprehensible sounds and extending to pain. His blood pressure is 120/70 mmHg and heart rate 80bpm. He weighs 70kg.

a) What is this man’s Glasgow Coma Score? (1 mark)

b) Why does he need intubation and ventilation? (2 marks)

c) Describe how you would achieve intubation and ventilation. (5 marks)
d) This is the result of the arterial blood gas analysis performed prior to transfer to the CT scanner, he is on an FiO₂ of 0.5 –

\[ \text{PaO}_2 \quad 16.3 \text{ kPa} \]
\[ \text{PaCO}_2 \quad 6.8 \text{ kPa} \]
\[ H^+ \quad 48 \text{ nmol/l} \]
\[ \text{pH} \quad 7.31 \]

Explain the most important reason why these results are unsatisfactory for this patient. (3 marks)

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 e) He is admitted to the intensive care unit. His intracranial pressure (ICP) is measured at 30 mmHg, mean arterial blood pressure (MAP) is 83 mmHg and central venous pressure (CVP) is 7 mmHg. What is his cerebral perfusion pressure (CPP)? (1 mark)

………………………………………………………………………………………………………………………………………………
………………………………………………………………………………………………………………………………………………
### f)
Give 6 treatment options available to improve this patient’s cerebral perfusion pressure. (6 marks)

1. [Space for answer]

2. [Space for answer]

3. [Space for answer]

4. [Space for answer]

5. [Space for answer]

6. [Space for answer]

### g)
List 2 intracerebral pathophysiological changes associated with secondary brain injury. (2 marks)

1. [Space for answer]

2. [Space for answer]
### CRQ Sample Questions and Answers

<table>
<thead>
<tr>
<th>Q</th>
<th>Marking Guidance</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
</table>
| a | GCS 5            | 1    | Accept E1, V2, M2  
Do not accept individual parts |
| b | To protect his airway  
As his GCS <8  
To prevent secondary brain injury | 1    | No mark for “needs CT scan” |
| c | Rapid sequence induction  
Mention cervical spine control  
Use of emergency intubation checklist  
Induction agent – any appropriate one  
Muscle relaxant  
Addition of opiate to obtund hypertensive response to laryngoscopy | 1    | Accept “modified”  
Propofol  
Thiopentone  
Ketamine  
Suxamethonium or rocuronium  
No mark for lignocaine or beta blocker |
| d | Hypercapnoea  
Causes cerebral  
vasodilatation/increased cerebral blood flow  
Results in raised ICP  
Results in reduced CPP | 1    | Accept raised PaCO₂ as a result of under ventilation. No mark for acidosis.  
Accept any 3 points |
e | 46 mmHg | 1 |

f | Ensure adequate sedation – reduces CBF | 1 |
- Optimise CO\textsubscript{2} – low end of normal – 4.0-4.5 kPa | 1 |
- Nurse slightly head up – avoids venous congestion | 1 |
- Consider use of mannitol | 1 |
- Consider vasopressor to increase MAP | 1 |
- Discuss with neurosurgeons – consider decompressive craniectomy | 1 |
- Consider thiopentone to reduce ICP (bolus or infusion) | 1 |

Accept 4.5-5.0 kPa |
No mark for avoid ETT ties – not a treatment |
Hypertonic saline/furosemide acceptable |
Accept EVD/CSF drainage |
In addition to adequate sedation |

\begin{itemize}
\item Focal areas of cerebral ischaemia
\item Disruption of the blood-brain barrier
\item Cerebral oedema/hyperaemia
\item Impaired cerebral autoregulation
\item Release of high levels of oxygen free radicals following injury
\item Cellular inflammatory response - increased excitatory amino acids (glutamate, aspartate)
\item Cell death and apoptosis
\end{itemize} | 1 |

No marks for Monro-Kellie/closed box, or simply stating raised ICP – must give an explanation of why ICP rises | 1 |
A 38-year-old man is admitted to the intensive care unit critically ill with a diagnosis of suspected acute severe pancreatitis.

**a)**
List three common causes of acute pancreatitis in the United Kingdom. (3 marks)

1.…………………………………………………………………………………………………………………………
2.…………………………………………………………………………………………………………………………
3.…………………………………………………………………………………………………………………………

**b)**
Two out of three diagnostic criteria must be met in order to confirm the diagnosis of acute pancreatitis. What are the three criteria? (3 marks)

1.…………………………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………………………
2.…………………………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………………………
3.…………………………………………………………………………………………………………………………
   ……………………………………………………………………………………………………………………………

**c)**
What is the single most important aspect of the medical management of a patient with acute pancreatitis? (1 mark)

…………………………………………………………………………………………………………………………
…………………………………………………………………………………………………………………………
d) Give 3 reasons why enteral nutrition would be preferred over parenteral nutrition in this patient. (3 marks)

1. 
2. 
3. 

e) When should enteral nutrition be commenced? (1 mark)

The patient becomes increasingly hypoxic requiring intubation and ventilation. A suspected diagnosis of acute respiratory distress syndrome (ARDS) is made.

f) What are the 4 criteria of the Berlin definition of ARDS? (4 marks)


g) Give the pathophysiological mechanism whereby acute severe pancreatitis may cause ARDS. (1 mark)


h) Despite an F\textsubscript{O}\textsubscript{2} of 1.0, lung protective ventilation and maximal positive end expiratory pressure he remains hypoxic. What additional strategies are available in an attempt to optimise his ventilation? (4 marks)

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<table>
<thead>
<tr>
<th>Q</th>
<th>Marking Guidance</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Gallstones</td>
<td>1</td>
<td>Max 3 but must include gallstones and alcohol</td>
</tr>
<tr>
<td></td>
<td>Alcohol related</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Idiopathic</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post endoscopic procedure</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infection</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Abdominal pain consistent with disease</td>
<td>1</td>
<td>Accept epigastric or generalised, not just “abdominal pain”</td>
</tr>
<tr>
<td></td>
<td>Raised serum amylase or lipase</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Characteristic findings from abdominal CT/MRI/USS imaging</td>
<td>1</td>
<td>Give mark if say imaging not needed if 1st 2 criteria met</td>
</tr>
<tr>
<td>c</td>
<td>Adequate fluid resuscitation</td>
<td>1</td>
<td>Accept goal directed fluid therapy</td>
</tr>
<tr>
<td>d</td>
<td>Maintains gut integrity</td>
<td>1</td>
<td>Accept prevents bacterial translocation</td>
</tr>
<tr>
<td></td>
<td>Reduced infection</td>
<td>1</td>
<td>Accept reduced incidence of sepsis/line infection</td>
</tr>
<tr>
<td></td>
<td>Reduces morbidity/mortality</td>
<td>1</td>
<td>Accept reduced incidence of organ failure/pancreatic necrosis</td>
</tr>
<tr>
<td>e</td>
<td>Within 48-72 hours</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>Acute onset within 1 week</td>
<td>1</td>
<td>Must say within 1 week to get mark</td>
</tr>
<tr>
<td></td>
<td>Bilateral opacities on CXR</td>
<td>1</td>
<td>No need to include PEEP in definition but do not penalise if included</td>
</tr>
<tr>
<td></td>
<td>$\text{PaO}_2/\text{FiO}_2 \leq 300$ (39.9kPa)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not fully explained by cardiac failure or fluid overload</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>g</td>
<td>Production &amp; excretion of inflammatory mediators causing damage to the alveolocapillary membrane</td>
<td>1</td>
<td>May get mark if mentions destruction of pneumocytes or decreased surfactant. No mark for sepsis as a cause</td>
</tr>
<tr>
<td>Step</td>
<td>Description</td>
<td>Marks</td>
<td>Notes</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------</td>
<td>-------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Neurouleskelar paralysis</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Prone positioning</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Inverse ratio</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Alternate modes of ventilation</td>
<td>1</td>
<td>Must give an example e.g. APRV, BIPAP, high frequency</td>
</tr>
<tr>
<td>1</td>
<td>Recruitment manoeuvres</td>
<td>1</td>
<td>Accept open lung ventilation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No marks for NO or ECMO as they are not ventilatory strategies</td>
</tr>
</tbody>
</table>
A 54 year old woman is referred to the pain clinic with a possible diagnosis of complex regional pain syndrome (CRPS). You undertake an assessment of her.

a) Give three risk factors for the development of CRPS. (3 marks)

1………………………………………………………………………………………………………..
2……………………………………………………………………………………………………..
3……………………………………………………………………………………………………..

b) Give 8 features you might find on clinical examination that would help confirm the diagnosis of CRPS. (8 marks)

1……………………………………………………………………………………………………..
2……………………………………………………………………………………………………..
3……………………………………………………………………………………………………..
4……………………………………………………………………………………………………..
5……………………………………………………………………………………………………..
6……………………………………………………………………………………………………..
7……………………………………………………………………………………………………..
8……………………………………………………………………………………………………..
A diagnosis of CRPS is made. Her GP has commenced her on simple analgesics and a tricyclic antidepressant.

c) What further drug treatments could she be offered? (4 marks)

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…………………………………………………………………………………………………………………………………………………………………………………………


d) Her pain persists. Give 5 non-drug treatments that may be offered? (5 marks)

1. ………………………………………………………………………………………………………………………………………………………………………

2. ………………………………………………………………………………………………………………………………………………………………………

3. ………………………………………………………………………………………………………………………………………………………………………

4. ………………………………………………………………………………………………………………………………………………………………………

5. ………………………………………………………………………………………………………………………………………………………………………
### CRQ Sample Questions and Answers

<table>
<thead>
<tr>
<th>Q</th>
<th>Marking Guidance</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Trauma</td>
<td>1</td>
<td>Accept fracture, crush injury, sprain</td>
</tr>
<tr>
<td></td>
<td>Female gender</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Period of immobilisation</td>
<td>1</td>
<td>Have to give example – CVA, brain/spinal injury, MI, pregnancy, VCV infection, neoplasm, surgery</td>
</tr>
<tr>
<td></td>
<td>Other inciting event (weaker)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>Allodynia</td>
<td>Max 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hyperalgesia/ hyperaesthesia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pain radiating beyond the initial area</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dermatomal distribution / stocking or glove distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oedema/abnormal sweating</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increased hair growth/brittle nails/skin atrophy</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Erythema/bluish appearance/pallor/Temperature asymmetry</td>
<td></td>
<td>Accept sudomotor changes</td>
</tr>
<tr>
<td></td>
<td>Muscle weakness/tremor</td>
<td></td>
<td>Accept trophic changes</td>
</tr>
<tr>
<td></td>
<td>Dystonic posturing</td>
<td></td>
<td>Accept vasomotor changes</td>
</tr>
<tr>
<td></td>
<td>Contractures/reduced range of movement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>Corticosteroids with/without mannitol</td>
<td>Max 4</td>
<td>Prednisolone/methylprednisolone or dexamethasone &amp; mannitol</td>
</tr>
<tr>
<td></td>
<td>Bisphosphonate</td>
<td></td>
<td>Alendronic acid/disodium pamidronate</td>
</tr>
<tr>
<td></td>
<td>Topical local anaesthesia/capsaicin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IV ketamine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral baclofen</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gabapentin/pregabalin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vasodilator (Ca channel or alpha blocker)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calcitonin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d</td>
<td>TENS</td>
<td>Max 5</td>
<td>Accept if say no longer recommended</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>Spinal cord/peripheral nerve stimulator</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Sympathetic block/sympathectomy/IV regional anaesthesia</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Somatic nerve blocks/epidural infusions</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Trigger point injections</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cognitive Behavioural therapy/ pain management programme/MDT referral</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Physiotherapy/occupational therapy</td>
<td></td>
<td></td>
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<td>Accept: mirror therapy /desensitisation therapy/ weight bearing</td>
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</table>
A 25-year-old woman who is 37 weeks pregnant is admitted to your labour ward with a blood pressure of 180/115mmHg and proteinuria. A diagnosis of severe pre-eclampsia is made.

a) What is the main reason that urgent blood pressure control is needed? (1 mark)

b) What associated symptoms might this patient have? (4 marks)

c) Give 2 drugs you would use to treat this patient’s blood pressure. (2 marks)
d) Why would magnesium sulphate be indicated in this patient (1 mark) and what dosing regimen would be used? (2 marks)

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The patient’s blood pressure has settled to 150/90mmHg. She has been started on magnesium treatment and is being managed on the labour ward with a view to delivery within the next 24 hours as the continuous cardiotocograph (CTG) recording is currently normal.

e) What monitoring does she require? (5 marks)

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f) The patient has had a caesarean section. She has lost 500mls of blood and has had adequate, appropriate fluid replacement.

How would you manage ongoing fluid balance in the post-operative period? (4 marks)


g) Why would this patient be particularly susceptible to pulmonary oedema? (1 mark)


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<tr>
<th>Q</th>
<th>Marking Guidance</th>
<th>Mark</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>To prevent intracranial haemorrhage</td>
<td>1</td>
<td>Accept: to prevent CVA or stroke</td>
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<tr>
<td>b</td>
<td>Headache</td>
<td>4</td>
<td>Any 4 of list</td>
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<td></td>
<td>Visual disturbance</td>
<td></td>
<td>Accept: Blurred/double vision/flashing lights</td>
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<td>Abdominal pain</td>
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<td>Upper quadrant/liver pain</td>
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<td></td>
<td>Vomiting</td>
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<td>Nausea</td>
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<td></td>
<td>Worsening of oedema of face, hands or feet</td>
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<td>Swelling but must specify location</td>
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<tr>
<td>c</td>
<td>Labetalol</td>
<td>2</td>
<td>Need labetalol PLUS one other to be awarded 2 marks</td>
</tr>
<tr>
<td></td>
<td>Nifedipine</td>
<td></td>
<td></td>
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<td></td>
<td>Hydralazine</td>
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<td>d</td>
<td>Magnesium is effective in preventing seizures</td>
<td>1</td>
<td>No marks for stating reduction in blood pressure</td>
</tr>
<tr>
<td></td>
<td>4g bolus over 5 -10 minutes followed by 1g/hr infusion</td>
<td>1</td>
<td>Allow 5-20 minutes for bolus</td>
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<td>e</td>
<td>ECG</td>
<td>5</td>
<td>accept arterial line</td>
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<td></td>
<td>Hourly non-invasive blood pressure</td>
<td></td>
<td>Accept fluid balance monitoring</td>
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<td></td>
<td>Pulse oximetry</td>
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<td>Accept either</td>
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<tr>
<td></td>
<td>Respiratory rate</td>
<td></td>
<td>Do not give a mark for plasma magnesium levels unless candidate states that there is renal impairment</td>
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<td></td>
<td>Fluid input / urine output</td>
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<td></td>
<td>Hourly reflexes and ankle clonus every hour</td>
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<tr>
<td>f</td>
<td>Restrict all IV fluids to 80-100mls/hr in total</td>
<td>4</td>
<td>No marks for restrict IV fluids – accept 1-1.5ml/kg/hr</td>
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<tr>
<td></td>
<td>Ideally stop IV fluids and give oral fluid</td>
<td></td>
<td>Accept no IV fluids and free oral fluid</td>
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<td></td>
<td>Record fluid input and output accurately</td>
<td></td>
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<tr>
<td>If urine output &lt;0.5mls/kg/hr give fluid challenge</td>
<td>Must mention figures for required output (accept 25-30mls/hr or 100mls over 4 hours)</td>
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<td>If no response consider invasive monitoring</td>
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<td>g leaky capillaries</td>
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<tr>
<td>g low serum albumin</td>
<td>Accept low oncotic pressure instead of low protein</td>
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