

1. Lead examiner

Candidate Number:

2. Co-examiner

Final Mark:

SCENARIO

A 30 year-old woman presents by ambulance to your ED following a generalised seizure at home. Just prior to arrival, she suffered a further seizure, which continues. The patient weighs 140kg. Her past medical history is unknown.

Question 1: Outline your initial treatment of this patient.

(1.5 minutes)

Expected Response	Details & Comments	Pass
Resuscitation	Identify that she is in status epilepticus. Resuscitation room. Full monitoring. Assume team leadership, delegate roles. Prevent further injury. Apply high flow oxygen . Suction debris from airway. Establish airway and ensure adequate ventilation. IV access for anticonvulsant, investigations. Monitor rhythm.	Bold
Terminate seizures Prompt, 'If she continues to seize, what other agents would you use?'	Recurrent seizures. Urgent seizure control indicated. 1st line: Midazolam 0.05-0.1mg/kg. Practically use 5 mg aliquots up to approx 20 mg.(Any other benzodiazepine including dose 2nd line: Traditionally phenytoin 15-20 mg/kg at 50 mg/min. Other options eg. Valproate IV loading , Keppra 1-2g IV loading. (3rd line: Barbiturates, propofol. Likely require/coincide with need for RSI and ventilation.)	Bold
Seek and treat potential causes Prompt as required – 'What causes are you considering?'	Hypoglycaemia Other: hyponatraemia, hypoxia, toxins, EtOH (incl withdrawal), CNS trauma, CNS sepsis, other (eclampsia), epilepsy	Glucose plus three others

Question 2: Her seizure is successfully terminated. She appears post-ictal with no focal neurological deficit and these are her vital signs (**HAND SHEET TO CANDIDATE**): (PR 125/min (SR), BP 190/110, Sats 100% on oxygen, RR 18, T 37.2. Her BSL is normal.)

List and justify your investigations.

(2 minutes)

Expected Response	Details & Comments	Pass
Bedside	ECG: As tachycardic and hypertensive ABG/VBG: Glucose, Na⁺, Ca⁺⁺. Expect to see mixed metabolic and respiratory acidosis. Act as baseline, evidence for other process/ingestion Urine: B HCG, protein	
Pathology Prompt: are there any other relevant blood tests in a 30 year old female?	Bloods: FBE: WCC (non specific: expect elevation in seizure, ?sepsis), plt (?bleeding risk). UEG/LFT: Baseline. Confirm Na ⁺ , Ca ⁺⁺ . ?hepatic failure ?coagulopathy likely. Coag profile: if evidence easy bleeding/ bleed on CT. (?DIC in eclampsia) Drug levels as indicated - anticonvulsants Septic screen if clinical concern for CNS/ other infection Serum B HCG LP: If clinical concern for meningo-encephalitis. After CT of brain. If ongoing seizures/ failure to recover conscious state then likely empirical treatment with delayed LP in view of risk of deterioration post LP.	Bolded tests with justification
Radiology	CXR: If hypoxia, tachypnoea, clinical evidence of aspiration, failure to recover GCS. Bedside USS: Evidence of pregnancy in view of obesity CT head: If no other clear cause identified. Focal lesion ?bleed (note hypertension) ?tumour ?encephalitis	

Question 3: You determine that she is in advanced pregnancy and she has a further seizure. Describe your management now. (2 minutes)

Expected Response	Details & Comments	Pass
Eclampsia: Urgent obstetric consultation	Obstetric emergency. Urgent delivery of fetus and placenta is treatment of eclampsia. 80-90% of eclampsia occurs after 30 weeks gestation. Obstetric review re emergent delivery/caesarian.	All bold
Positioning	Maintain L lateral / use wedge to avoid IVC compression	
Seizure prevention/control <i>Prompt: How would you manage further seizures.</i>	Magnesium loading: Safe with wide therapeutic window. Options include 1) 20-30 mmol IV (2 to 4 g) over 15 mins, then 10 mmol/hr, 10 mmol slow IV push if further seizures. Usually successful. Most eclamptic seizures short lived. Titrate to loss of reflexes as sign of upper dose range. Second line: further benzodiazepines, expert advice re other anti-convulsants. If ongoing seizures/coma or failure to recover conscious state then I + V required to protect airway, maintain maternal/foetal oxygenation, allow further anti-convulsant therapy (eg. phenobarbitone, propofol). Avoid ongoing paralysis (allow seizure detection), EEG monitoring ideal.	Mg ²⁺ must have bolus and infusion mentioned
Airway	Intubation indicated if ongoing seizures/ failure to recover conscious state. (prevent maternal/fetal hypoxia). Anticipate and prepare for difficult maternal airway.	
BP control <i>Prompt: A repeat BP remains at 190/110.</i>	If remains hypertensive (SBP > 170, DBP > 110) then treatment required. Aust: IV hydralazine 2.5-5mg every 15 min + IV fluid. NZ: IV labetalol (20-50 mg IV, repeat if needed 15-30 mins) Target (approx) SBP < 150, DBP < 100. Seek expert advice.	
Management of foetus	Fetal heart monitoring. CTG if able. Formal USS ASAP to assess fetal well being/ gestational age.	
Fetal maturity	Uncertainty re dates. Steroids (Betamethasone IMI) empirically unless formal 'dating' USS easily available.	

Question 4: Her seizures are controlled. Your hospital has no obstetric service. Transfer is suggested by the obstetric service at a nearby hospital. Outline how you would proceed. (1 to 1.5 mins)

Expected Response	Details & Comments	Pass
Urgent transfer is appropriate	Urgent delivery required. Need to expedite safe transfer to facilitate this. Ambulance communication.	All Bold
Patient preparation	2 x IV well secured. IDC. Monitoring. Assessment of conscious state/ airway patency. If ongoing seizures, failure to recover conscious state to GCS > 9 or concerns re airway protection then intubation prior to transfer. Ongoing blood pressure management.	
Staff	Senior Medical and Nursing staff with advanced airways skills and experience in managing status epilepticus. ED consultant or SR ideal. Obstetrician? Receiving hospital is nearby.	
Drugs	Magnesium infusion + bolus doses. Benzodiazepines/ other anticonvulsants.	
Equipment	Airway equipment and intubation drugs. Magnesium and midazolam	
Communication	Receiving hospital Obstetric service, ICU ,ED.	
Paperwork	All ED paperwork/investigations copied for transfer.	

Comments: (if you fail the candidate, please state why)

If the candidate fails the exam overall, what feedback would you suggest CIC provide for this SCE?

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