

1. Lead examiner

Candidate:

2. Co-examiner

Final Mark:

SCENARIO

A 47 year-old woman presents to your emergency department complaining of a gradual onset generalised headache and vomiting since yesterday. Her past history includes a renal transplant 2 years ago. She appears disorientated and memory impaired.

Her observations are

Pulse rate	100	bpm	BP	160/90	mmHg
RR	14	bpm	Temp	37.8	deg C tympanic
GCS	14	(disorientated)	SaO2	98%	(room air)

Her medications are perindopril, caltrate, prednisolone and azathioprine.

Question 1: Outline the key features in your history.

.....2 min

Expected Response	Details & Comments	
Hx presenting illness (confirm / expand on detail)	Headache – details - onset, severity, past episodes, prodrome, visual disturbance, speech change, weakness, paraesthesia, other neurological Sx Systemic features – rigor, cough, D/V, urinary Sx Recent antibiotics / recent illness Travel / infectious contacts / trauma	
Renal Hx	Cause and duration of ESRF; complications of Rx, esp sepsis or graft rejection Baseline renal function Principal healthcare service involved in her Mx	
Medications	Dose / compliance Allergies / adverse reactions, esp to Abx. Recent changes, esp to immunosuppressive agents. Compliance with Rx. Complications of Rx.	
Co-morbidities / Risks	DM (but not on specific Rx); smoking	
Social	Implications for family, income, other personal Level of understanding of chronic disease, and expectations Special circumstances: eg non English speaking background, indigenous etc	
Differential Dx (prompt if not given)	Meningitis / Encephalitis - meningococcal, pneumococcal, viral (CMV, HSV), toxoplasmosis, TB Viral encephalitis, in particular HSV Cerebral abscess Subarachnoid haemorrhage - especially if polycystic kidney disease Other sepsis : As with immunocompetent patient: typical/atypical pneumonia, influenza, UTI. Or opportunistic: eg Toxoplasmosis, pneumocystis pneumonia	

Question 2: A non-contrast CT brain is normal. The radiologist suggests a contrast CT. The patient's creatinine is 135 (ref. range <110), which is normal for her. Outline your approach to renal protection in this case.....1.5 min

Expected Response	Details & Comments	
Adequate hydration key, N-acetylcysteine to be considered (prompt if not mentioned) Protection against contrast nephropathy. Highest risk with established renal impairment and dehydration. Despite her higher creatinine, this pt at low risk, provided she is well hydrated.		
Evidence	Limited. Outcomes in studies not optimally established – eg definitions of acute nephropathy, meaningful change in serum creat, and if such changes reversible. Need to account for potential bias, such as intercurrent dehydration as cause of nephropathy. Variations in NAC regime (dosage, route, duration).	
Benefits	Though limited, some evidence suggests prevention of creat rise in certain groups. Very few adverse effects of NAC; does not consume much time to administer. Available, inexpensive, easy to administer.	
Risks / Disadvantages	Potential allergy Most marked disadvantage is that it's probably ineffective, or at best avoids creatinine changes which are reversible anyway. Adequate hydration is probably the key preventive method.	

Question 3: The CT Brain with contrast is normal. What are the key issues to consider regarding a lumbar puncture in this patient?

1.5 min

Expected Response	Details & Comments	
Diagnostic yield	CSF assay the gold standard test for CNS infection Able to direct antibiotic treatment to known organism/sensitivities Public health benefit of data collection/epidemic monitoring PCR/ gram stain may redirect early therapy	
Alternatives	MRI	
Procedure details	Needle size and type; pt position; use of manometry; ?pt sedation Body habitus – effect on ease of procedure Ability to cooperate / remain still (altered mental status)	
Risks / Complications	Specific contra-indication: e.g. thrombocytopenia / coagulopathy Raised ICP may not be identified on CT Local infection, nerve damage, ICP leak	
Timing	Delays to procedure delay antibiotics Delays to results-delaying antibiotics Would the LP result actually modify treatment? i.e. why do it?	
Pt consent & preference	May not be competent to consent	

Question 4: Prior to the LP the patient has a generalised seizure. Describe your management.

2 min

Expected Response	Details & Comments	
Seizure	General measures - O ₂ ; guard airway Seek extra assistance, nursing, medical Move to resus bay if not previously- observe further seizures Seek and treat hypoglycaemia / hyponatraemia 1st line - BZD – IV midazolam, clonazepam or diazepam (prompt for doses if time) 2nd line - Phenytoin load- adjust dose (prompt for doses if time) Watch GCS, if fails to recover to GCS within reasonable post-ictal period - intubate	
Infection	Empiric antibiotics / antivirals: Ceftriaxone, Acyclovir, Penicillin or Ampicillin (for Listeria) Bolus dose corticosteroid prompt for antibiotics – if not given earlier	
Lumbar Puncture	Defer, at least until pt stabilised Seizure is not an absolute contra-indication for LP, given normal CT. Candidates should justify their choice to proceed or not	
Disposition (prompt if needed)	Will need transfer to tertiary centre with home renal team- may need to intubate for transfer Communication with receiving team Documentation	

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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