OCTOBER 2005 FFAEM SAQ’s

Wherever possible give dosages and route of drugs you mention

Question 1

A 28 yr old man presents presents to the A&E department complaining of shortness of breath and pleuritic chest pain. His arterial blood gases are as follows

On Air

pH 7.37

pO2 8.0

pCO2 2.3

BE -2.0

Give three investigations, other than D-Dimer, you would perform in the ED (3 marks)

*F.B.C., CXr, ECG, CRP,*

At this stage give 4 risk factors as described by the BTS to exclude Pulmonary Embolism. (4 marks)

*Surgical- major abdo/pelvic surgery, hip/knee replacement, Post op ICU*

*Obstetric- puerpurium, late pregnancy, Caesarain Section*

*Lower limb problems- Fracture, Varicose veins*

*Malignancy- pelvic or abdominal, disseminated*

*Reduced mobility- hospitalisation, Institutional care*

*Others- proven previous VTE*

His D-Dimer result returns at 0.2 (normal range <0.14)

What 2 management steps would you now make? (2 marks)

*Start anticoagulants initially LMH- enoxiparin 1.5 mg/kg OD or 1 mg/kg BD*

*Arrange definitive investigation- spiral CT chest or CT angio or VQ scan if clear CXr, or pulmonary angio*

The patient now becomes acutely short of breath and hypotensive. What one management step would you now take? (1 mark)

*Thrombolyse with 50 mg bolus of alteplase*

Question 2.

7 yr old child presents to A&E with a 12 hour history of headache and photophobia, but with no rash

Urea and Electrolytes as follows

Na+ 125

K+ 3.7

U 3.2

Cr 51

Give 2 possible neurological diagnoses for the symptoms described. (2 marks)

*Meningitis, intracranial haemorrhage, Migraine, Encephalitis*

What is the neurological cause for the Hyponatraemia (1 mark)

*Meningitis*

2 complications of Hyponatraemia (2 marks)

*Seizure, anorexia, headache, drowsiness, nausea and vomiting, tachycardia and about 10 million others*

Give 5 investigations you would perform in the ED for a patient with Hyponatraemia (5 marks)

*Urinalasis, FBC, U&Es, LFTs, BM/glucose, urine osmolality, ECG, CXr, consider CT head, LP if no signs of raised ICP*

Question 3.



A 45 year old man presents to the ED with a rash on his palm which is intensely itchy. The SHO thinks it is Scabies

Describe 2 features of the rash (2 marks)

*Erythematous linear popular rash suggestive of burrows*

Give the Diagnosis and one differential (2 marks)

*Diagnosis: Scabies*

*Differential: Insect bites, dermatitis or psoriasis*

What causes the itching? (1 mark)

*Itch caused by reaction to the faeces, eggs and the mites themselves later during disease*

Give 2 other features of this condition (2 marks)

*Tends to be worse at night and during winter months, tends to affect multiple household members, if undiagnosed lasts for years (7 year itch), can become superinfected,*

Give 2 treatments (2 marks)

*Scabicide – e.g permethrin*

*Antihistamines- tablets or creams*

*Steroid cream/ointment- 1% hydrocortisone*

*Crotamiton- anti pruritic topical*

What further advice would you give to the patient? (1mark)

*Advise thorough hygiene and treatment of all household members*

*advise to boil wash all clothing and bedding*

*See GP if not effective or returns*

Question 4.

A 65 yr old man is in your ED with a known overdose of Digoxin. An ECG has been performed. His U+E’s are Na+ 142, K+ 6.7, U50.1, Cr 502



Describe 4 features of the ECG (4 marks)

*Supraventricular bradycardia ? slow AF as no visible p waves, T wave inversion and ST depression inferolaterally, reverse tick sign laterally, prominent u wave laterally,*

Give 3 indications for digibind (3 marks)

*K+ > 5, digoxin level >15, ingested >10mg, ventricular tachyarrhythmia, haemodynamically unstable bradyarrhythmia, altered mantal status attributable to dig toxicity*

Give 3 other treatments for this patient and give reasons for them (3 marks)

*Calcium gluconate- 10ml of 10% over 2 min to counteract the hyperkalaemia*

*Calcium chloride- 5 ml of 10% over 2 min*

*Salbutamol nebuliser 5ml- increases intracellular K+ reabsorption*

*Fast acting Insuline 10-15 iu in 500ml of 10% dextrose- increase K+ reabsorbtion*

*Atropine 0.5 mg up to 3mg to reverse bradycardia*

*Magnesium in case of torsades de pointes*

5. A 30 yr old female who works as an accountant and who is known to have been depressed for some time is brought to the ED having been found unresponsive. An ECG has been taken on arrival.



Describe ECG and give the cardiac diagnosis (2 marks)

*Broad complex Tachycardia, regular, most likely Ventricular tachycardia*

As you are looking at the ECG the patient has a fit.

Given this event what is the most likely diagnosis for the patient? (1 mark)

*Tricyclic overdose*

What drug would you give and what is it’s mode of action? (2 marks)

*Drug: Sodium bicarbonate 1mEQ/kg bolus*

*Mode of action: Unblocks the sodium channels and might reduce the bioavailability of TCAs by increasing their binding to protein*

What aspects of the patients condition would you monitor after giving this drug (2 marks)

*Monitor pulse, BP, rhythm, mental status, oxygenation*

Give 4 other actions you would take to manage this patients fitting (4 marks)

*Protect airway- recovery position +/- nasopharyngeal airway, give O2 if not already on, IV lorazepam 0.1 mg/kg, call anaesthetist/ICU, follow the seizure pathway*

6. A 65 yr old male attends complaining of loss of vision in his left eye

Give six features you would enquire about in the history (3 marks)

*Visual acuity*

*Flashers/floaters/ amaurosis fugax*

*trauma*

*headache/temporal pain/ systemic upset*

*neurological signs or symptoms*

*eye pain*

*previous medical history e.g. AF, TIA*



2 abnormalities of the fundus (2 marks)

*Venous engorgement and widespread haemorrhage. Sunset appearance*

What is the diagnosis? (2 marks)

*Central retinal vein occlusion*

Give 6 associations of this condition (3 marks)

*Trauma- closed head*

*Vasculitis*

*Hypercoaguability states*

*Hypertension*

*DM*

*Alcohol*

*Glaucoma*7. A 10 yr old girl has fallen off a wall and presents with a “sore arm”.

Give three features which are required to “clear the neck” (3 marks)

*Pt fully conscious*

*No evidence of intoxication*

*No neck pain/ midline tenderness*

*No neurological deficit*

*No distracting injury*

*ROM >45o in all directions*

*Age < 65*



Describe the X-ray (1 mark)

*Fracture distal shaft of humerus with posterior displacement*

Give the diagnosis (1 mark)

*Supracondyla fracture humerus*

Give 2 potential neurological complications of this injury and how you would test for them. (4 marks)

*Median nerve palsy- reduced sensation over the palm, reduced thumb opposition and wrist palmar flexion*

*Radial nerve – reduced sensation thumb, reduced wrist dorsiflexion*

Other joint injuries can also give rise to nerve injuries, give an example. (1 mark)

*Shoulder dislocation- axillary nerve*

*Neck of fibula fracture- peroneal nerve*

*Knee dislocation- superficial peroaneal nerve*

*Hip dislocation- anterior- femoral nerve*

 *Posterior- sciatic nerve*

 *Medial(acetabular)- gluteal nerves*

*Wrist- median nerve*

8. 38 yr old pregnant woman 35 weeks pregnant comes with visual disturbance and headache. Her Blood pressure is 165/100

FBC WTU LFT

Hb 8.1 Blood ++ Bil 12

Plt 50 Protein+++ AST 1000

WCC 5.1 Nitrates - GGT 817

poikilocytes seen

Describe 2 abnormalities of the FBC and explain them (2 marks)

*Anaemia due to haemolysis*

*Low platelets due to microangiopathy as part of HELLP syndrome (Haemolysis, elevated liver enzymes and low platelets)*

What is the likely diagnosis? (2 marks)

*Pre eclampsia and HELLP syndrome*

To control BP what drug , including dose and route, would you use? (3 marks)

*Labetalol 10mg IV or 100mg PO*

*Can use hydralazine 10mg IV*

Give 3 other steps in the management of this patient (3 marks)

*Call anaesthetist and senior obstetrician.*

*Magnesium 4-6mg IV*

*Arrange to deliver baby.*

*Treat in darkened, quiet room*

Question 9

A 28 year old man has been out kite surfing and was thrown into the water at high speed. He is brought in on a spinal board with C-spine protection. He is intubated and ventilated and put on a propofol infusion.

His observations are, pulse 65, BP 90/60 and he is warm and well perfused.

The C-spine film and tomogram are shown below.



Describe 3 abnormalities on the XR (3).

*# body C4, loss of space C3-4, probably soft tissue swelling*

*Burst fracture*

Describe 2 aspects of his cardiovascular status (2).

*Hypotensive and bradycardic/normocardic*

What is the likely diagnosis? (2)

*Spinal shock*

What 3 signs would support this? (3)

*priapism*

*Pink, well perfused peripheries,*

 *flaccid paralysis below level C4,*

*increased tendon jerk reflexes below that level (might be absent initially)*

 *loss of sensation,*

*very weak respiratory effort,*

Question 10

A 42 year old man has been found outside A&E fitting. He is dishevelled and smells strongly of alcohol. BM =2.4

What is the definition of status epilepticus? (1)

*Status epilepticus is seizure lasting > 30mins or more than one seizure wiith failure to recover between fits.*

Name 3 steps in managing his fitting. (2)

*Treatments:support airway and giove high flow oxygen. And check BM*

*Give 4mg IV lorazepam or 10mg iv diazemuls .*

*Pabrinex IV replacement and then give 50mls 50% dextrose or 500mls 10% dextrose IV.*

*May need phenytoin 18mg/kg IV or thiopentone 4-3-5mg/kg.*

List 3 reasons for organising an urgent CT head on this man.(3)

*Reasons for CT. May have intracranial bleed requiring surgery.*

*May have meningitis.encephalitis and need LP and look for SOL.*

*Possibility of closed head trauma*

Give 4 reasons as to why alcoholics are more likely to fit. (4)

*more likely to have head injury with complications. Alcohol withdrawal.*

*coagulopathy making bleeds worse,*

 *impaired gluconeogenesis causeing low BM*

Question 11

A 15 month child comes to A&E following a 3 day history of a viral illness with a maculopapular rash. On the day prior to presentation he had had bouts of colic but had been eating and drinking and had been otherwise settled.

He comes to the department unwell, with bloody diarrhoea and a capillary refill time of 3 secs.

This is his abdominal XR.



What is the likely diagnosis? (2)

*Intussusception*

List 3 predisposing factors. (3)

*Vviral illness, cystic fibrosis, benign or malignant bowel tumours- e.g. putz Jeager, Meckel’s, coagulopathies e.g HSP- causing haematomas, sutures and staples, inverted appendiceal stump, Male gender*

What would be the child’s fluid requirements be over the next 12 hours? (3)

*Fluids- 1yearold= 10kg, 500 ml over 12 hours, keep UO 2ml/h*

Name 2 treatment options. (2)

*Air contrast/hydrostatic enema if large bowel involved,*

*Surgical*

Question 12

A 60 year old man comes to A&E with his sister. She says he has been withdrawn and quiet lately, and has been saying he wants to die.

Give 6 features in assessing his risk of suicide. (6)

*Sex*

*Age*

*Depression- H/O*

*Previous attempt at suicide*

*Excessive alcohol/drugs*

*Rational thinking loss*

*Separated/divorced/widowed*

*Organised/serious attempt*

*No social support*

*Suicide intent for the futu*

What are 4 important aspects of the mental health act where you work? (2)

How would you ensure the patient could make a decision regarding his treatment? (2)

13. A man staggers into your department and says that he and many other people have been on the Tube and were sprayed with a liquid. He then collapses.

Other than calling your ED consultant, give 4 actions you would take to manage the situation.

1. *Isolate the pt- undress and destroy clothes, thoroughly wash- all done in protective gear*

2. *inform unit/hospital manager*

3. *declare major incident standby,*

4. *contact police to corroborate story*

*inform ambulance control,*

 [3 Marks]

Give four of the muscarinic effects of organophosphate poisoning

*Diarrhoea*

*Urination*

*Miosis*

*Bronchospasm*

*Emesis*

*Lacrimation*

*Salivation*

*Piloerection*

 [4 Marks]

Give three drugs to treat organophosphate poisoning.

 *Diazepam- 10mg IV, or another benzodiazepine*

*Atropine- large doses may require 20mg or more infusion*

*Pralidoxime- specific antidote to organophosphate poisoning*

14. A 3 year old child attends your department late one night . She has stridor but is alert, and has previously been well.

Apart from croup give four differential diagnoses.

1. *inhaled foreign body*

2. *epiglotitis*

3. *angiooedema*

4. *tracheitis.* [2 Marks]

List 3 drugs with dose and route of administration used to treat croup.

1. *dexamethasone 0.15-0.6mg/kg,*

2. *prednisolone 1-2mg/kg,*

3. *budesonide 1-2mg nebulised,*

*adrenailne 5mls 1:1000 neb.* [3 Marks]

Give 4 aspects of the scoring system to evaluate croup.

1. *recession, ,.*

2. *stridor,*

3. *air entry*

4. *cyanosis,* [4 Marks]

*mental state*

Give 2 reasons to admit a child with croup.

1. *croup score > 2*

2. *no response to treatment*

 [1 Mark]

*parental anxiety. late at night as croup tendss to get worse overnight..*

15. A 35 year old male attends your department. His partner is HIV positive and being treated for TB. Blood gases on 60% oxygen show

pH 7.44

pCO2 4.0Kpa (30mmHg)

pO2 16.5Kpa (124mmHg)

Bicarb 22 mmol/L

B.E. -1



CXR as shown

Describe the CXR [2 Marks]

*PA erect CXr- Patchy consolidation in the L upper zone*

Excluding TB give 2 differentials diagnoses. [2 Marks]

*Left upper lobe pneumonia*

*Aspergilosis*

*Pneumocystis*

*Psitticosis*

*Pneumonitis- viral*

List 3 organisms that may infect the pulmonary system in HIV. [3 Marks]

*Staphylococcus Aureus, a, Pneumocystis Cariniae, Aspergillous, Streptococcus pneumoniae, Legionell, Haemophylus- you name it it’ll do it*

Give 6 tests in the ED which would help in the management of the patient. [3 Marks]

*FBC, U&Es, CRP, Glucose, CD4 count, pulse oximetry, ABGs (sigh), BP*

16. A 24 year old male had been assaulted. He has swelling around his LEFT eye and a cut on his RIGHT cheek. Your SHO has requested facial views 

Give 3 abnormalities on the Xray [3 Marks]

*left, ? orbital floor fracture. ? fluid level in left antrum.*

List six aspects of assessment of the orbit and its contents. [4 Marks]

*Visual acuity. pupil response, anterior chamber/lens and fundus. eye movements, infraorbital nerve function. proptosis and enophthalmos, subcut emphysema.*

List 3 further steps in this patients management. [3 Marks]

*discus with max fax,*

 *advice re nose blowing.*

*return immeiately if decreased vision or pain on eye movements*

*Analgesia- eg 800 mg ibuprofen TDS*

*advice to avoid flying/pressurined areas*

*commence on ABX*