2017.2 SA STATEWIDE ACEM SAQ TRIAL EXAM Booklet 1 – Answers

SAQ 1 ANSWERS

A 3-year-old boy presents to the Emergency Department with a forehead laceration (see photo below) after hitting his head on the corner of a coffee table. There are no other injuries.

i) Fill in the table with different methods to close this wound. Give one advantage and one disadvantage of each method. (9 marks)

Method	Advantage	Disadvantage
Surgical tapes (Steristrips)	Quick and easy to put on Inexpensive	Less tensile strength May fall off before heals Cannot get wet Child may pull them off
Tissue adhesive	No LA needed Quick and easy to apply Cosmetic results same as sutures No removal needed Parental satisfaction	Wound dehiscence (increased with sutures) Needs to stay dry Child may pick at it
Sutures	Good tensile strength Low wound dehiscence Good skin approximation	Longer to perform Requires LA +/- sedation Risk of needlestick injury Requires removal
Staples	Quick	Painful Requires removal Less skin approximation May leave poor cosmetic results

ii) Fill in the table with 2 sedation options to close this wound in this patient. (4 marks)

Drug	Dose
Morphine	0.05 – 0.1mg/kg IV

Ketamine	1 – 1.5mg/kg IV 3 - 4mg/kg IM
Midazolam	0.15mg/kg IV 0.2 – 0.4mg/kg intranasal

iii) The patient develops laryngospasm as a complication of the sedation. Outline your management steps for this patient. (5 marks)

- Stop the procedure
- Call for expert help
- Administer 100% oxygen through a mask with a tight seal and a closed expiratory valve (trying to force vocal cords open with positive pressure)
- Suction to clear the airway of any blood or secretions
- Attempt manual ventilation while continuing to apply continuous positive airway pressure (CPAP)
- Attempt to break the laryngospasm by applying painful inward and anterior pressure at Larson's point/laryngospasm notch bilaterally while performing a jaw thrust
- Consider deepening sedation (low dose propofol) to reduce laryngospasm
- If hypoxia continues, consider administering suxamethonium (0.1 – 0.5mg/kg). If severe, need full dose (1-2mg/kg IV) and perform intubation. If no IV access, can give IM sux (3-4mg/kg)
    - For bradycardia, atropine (0.02mg/kg)

SAQ 2.

A 65 year old man presents to your ED with acute painless loss of vision in his right eye. There has been no history of trauma or injury.

List 4 likely differential diagnoses, as well as a key feature of both the history and physical examination that would suggest each diagnosis (12 marks)

4 of the following diagnoses, one mark for each, plus one mark for an appropriate feature on history and one mark for an appropriate feature on examination for each diagnosis up to maximum of 12 marks (some examples given, others may be ok too – only one is required in each box to score a mark however)

Diagnosis	History	Examination
Central retinal artery occlusion	• *Sudden onset* • *History of AF or other thromboembolic disorders*	• *RAPD* • *Retinal pallor on fundoscopy* • *VA < 6/60*
Central retinal vein occlusion	• *Sudden onset* • *History of DM, HTN*	• *Large areas of haemorrhage on fundoscopy* • *Abnormal red reflex*
Retinal detachment	• *Preceding flashes/floaters* • *Myopia*	• *Abnormal red reflex* • *Mobile detached retina may be seen on fundoscopy*
Optic neuritis	• *Less acute onset over hours – days* • *Pain on eye movement* • *More likely women age 18-45* • *Other focal neurological symptoms*	• *RAPD* • *Optic disc oedema on fundoscopy* • *Other focal neurological signs*
Giant cell arteritis/Arteritic Ischemic Optic neuropathy	• *Temporal headaches* • *Fevers, night sweats* • *Jaw claudication* • *Myalgias*	• *RAPD* • *Tender temporal artery* • *Optic disc oedema on fundoscopy*

SAQ 3.

A 23 year old male presents to an urban district hospital in a private car after falling from a 1st floor balcony. He was at a party and admits to drinking heavily. He is complaining of isolated abdominal pain and had a positive FAST scan. He has some abdominal wall abrasions and superficial lacerations.

P	**130**
BP	**80/60**
Sats	**91% on room air**
RR	**26**
Temp	**35.1**
GCS	**15**
BSL	**5.6**

A CT abdomen is obtained and 2 key images are provided. (see Prop Booklet)

A) List the three (3) **MOST** abnormal findings seen on the CT images (3 marks)

Grade 4 liver laceration - >25% of RIGHT lobe

Active haemorrhage/blush

Haemoperitoneum

B) The patient has had a Pan Scan and there are no additional injuries detected. There is a 1 hour delay till the patient can receive definitive management of their injury.

Outcome (5 marks)	**Management (5 marks)**
Adequate Oxygenation	Provision of Oxygen via NP/FM/NRB Head up Analgesia to allow adequate ventilation
Avoidance of Shock/Correction of tachycardia/hypotension	Initial crystalloid only if blood not available Blood products/MTP if not meeting haemodynamic end points (e.g MAP 65, UO 0.5-1ml/hr, normal mentation)
Analgesia/Comfort	Titrated IV opiates e.g. morphine/fentanyl/ketamine PCA
Appropriate haemodynamic monitoring	Insertion of arterial line/CVC/IDC
Correction of hypothermia	Bair hugger, warm blankets Warmed fluids/blood
Avoidance of infection	Cefazolin 1g iv for wound prophylaxis ADT if required Wound cleansing and dressing
Well informed patient and family	Discuss management with patient, and NOK if patient allows Gain valid consent for those procedures performed in ED
Avoidance of coagulopathy	Blood products (FFP/Cryo/Platelets) appropriate for coagulation parameters Correct hypothermia e.g bair hugger TXA 1g over 20mins then 1g over 8hrs
Prevention of vomiting/aspiration	NGT Antiemetics e.g 4mg IV ondansetron

C) List the three (3) options that can be considered for non-ED definitive management of this type of injury, with a one (1) pro and one (1) con for each option (9 marks)

Definitive Management (3 marks)	**Pro (3 marks)**	**Con (3 marks)**
Conservative – close observation on high dependency ward/ICU	No requirement for surgery/instrumentation so less risk of intra/post op complications, anaesthetic complications and infection	Patient has evidence of active bleeding so higher likelihood of failure and need for invasive intervention at later stage
Angiographic Embolisation	Avoids need for laparotomy Less pain Less invasive Less risk of infection/post op complications	Requires specific expertise Risk of pseudoaneurism Doesn't allow inspection of IA contents for other occult injuries Risk of deterioration in angio suite
Laparotomy and packing of liver (damage control surgery) with later	Can delineate the extent of injuries further e.g bile leak – CT findings not always consistent with operative findings CT is a snapshot – can see rapidity of bleeding directly Able to check rest of abdominal contents	Post op complications e.g. wound pain, infection, Anaesthetic complications e.g PONV, aspiration

SAQ 4

A 40-year-old man with a past history of hypertension presents to your Emergency Department complaining of a gradual onset severe headache with associated drowsiness and vomiting. His initial nursing observations are:

BP 240/140mmHg Pulse 70b/min

GCS 13 (E3 eyes opening to speech; V4 confused; M6 obeying commands)

RR 26 with O_2 sats 94% on RA

Temp 36.5^{O}C

Power 5/5 all 4x limbs and no facial asymmetry

A) What is the most likely diagnosis in this patient? (2 marks)

- Answer: Hypertensive crisis or Malignant Hypertension (1 mark) with Encephalopathy (1 mark)

B) List and justify the immediate investigations required for this patient (10 marks)

Answer: Any 3 of the following

Investigation	Justification
CT Brain	**To investigate for intracranial haemorrhage vs encephalopathy**
EUC	Check for acute kidney injury secondary to hypertension
Cardiac Troponin I	?NSTEMI or myocardial ischaemia secondary to hypertension

ECG	Looking for myocardial ischaemia and evidence of LVH
CXR	To assess for cardiomegaly, widened mediastinum and evidence of acute pulmonary oedema

Investigation	Justification
CT A Chest	Investigating for possible thoracic aortic dissection as a complication of hypertension.
Urine Analysis	Checking for proteinuria as part of acute kidney injury.
USS/Echocardiogram	Looking for LVH, evidence of myocardial dysfunction and APO.

C) What would be your top FIVE management priorities for this patient? (8 marks)

Answer:

- Analgesia (0.5marks): Fentanyl or Morphine (0.5 marks)

- Anti emetic (0.5marks): Ondansetron or equivalent (0.5 marks)

- Supplemental Oxygen to correct high RR and low O_2 saturations (1 mark)

- Immediate controlled reduction of blood pressure (1 mark) with the target of lowering initial MAP by 25% or diastolic to 110mmHg over the first hour (1 mark).

- Followed by a gradual decrease in blood pressure to 160/100 over the next 4-6hours (1mark).

Mention of medications used to facilitate the reduction in blood pressure: a B blocker (Labetolol or Esmolol) (1 mark) and either GTN or sodium nitroprusside (1 mark).

Total marks for Question: 20

SAQ 5

A 2 year old child is brought to ED by a concerned mother. The boy has been previously well, takes no medications, has no allergies and is now crying unconsolably, apparently in pain, looks pale and lethargic. Mother advises there have been several similar episodes in the last 24 hours.

You decide the child is not shocked and requires immediate analgesia.

A) Name two drugs from different pharmacological classes, the dose and route(s) by which you would provide the analgesia to this boy. (2 marks)

Suggest: paracetamol 15-20mg/kg po (if no vomiting) or 20mg/kg PR; intranasal fentanyl 1.5microgram/kg pending IV access

As part of the clinical work up a plain abdominal x-ray (AXR) is performed, shown below:

A. Give 3 significant positive and / or negative findings on this AXR. (3 marks)

1. Soft tissue mass / shadow in the upper abdomen
2. Paucity of gas centrally and overall
3. Small bowel distension to the left side in abdomen

B. List 4 most common causes of bowel obstruction in children under 5 years of age. (4 marks)

1. Intussusception (commonest)
2. Incarcerated inguinal hernia; note other abdominal wall hernias are rarely associated with bowel obstruction in children, so are not accepted
3. Malrotation of the gut with midgut volvulus
4. Post-operative adhesions

NEXT MOST COMMON are:

5. Annular pancreas
6. Mesocolic hernia

SAQ 6

SAQ 7 Febrile returned traveller

A 28-year-old man presents to your emergency 12 days after returning from a trip to Indonesia with a febrile illness. After using “Dr Google” he is concerned he has malaria.

i. List five differential causes for this man’s febrile illness. (4 marks)

Common infections- Viral infection, RTI, cellulitis
Region specific- malaria, dengue, other arboviruses (barmah forest, JEV)
High risk activities- STI, IVDU related
GIT- typhoid/paratyphoid, cholera, shigella, salmonella, E coli, giardiasis
Viral hepatitis

ii. State 5 important features, specific to the travel, should you seek in the history. (4 marks)

location and times- regional resistance patterns and incubation times
Accommodation and exposures: animals, insects, water and food
High risk activities- unprotected sexual contact, IVDU
Sick contacts
Pre travel vaccinations and malaria prophylaxis and precautions

iii. Specific to malaria what diagnostic tests are available and what are important features of each. (4 marks)

Investigation	Important features
Antigen based Rapid diagnostic Test	**Rapid** but qualitative, simple use in the field and do not require lab facilities
Thick and thin blood films	**Gives diagnosis and parasite load**, do require lab facilities, should have multiple samples for rule out

SAQ 7

1a) 12 lead ECG with irregular narrow complex tachycardia, rate of about 135bpm

1b)

- lung pathology
- thyroid pathology
- hypertension
- cardiovascular (anything that increases LA volume: mitral valve disease, cardiomyopathies)
- electrolytes
- alcohol binge ('holiday heart')

2) Beta blocker/ calcium blocker / digoxin (as sole agent questionable)

Article Navigation

Therapy	Acute intravenous rate control	Long-term oral rate control	Side effect profile	Comments
Beta-blockers[a]				
Bisoprolol	Not available	1.25–20 mg once daily or split.	Most common reported adverse symptoms are lethargy, headache, peripheral oedema, upper respiratory tract symptoms, gastrointestinal upset and dizziness. Adverse effects include bradycardia, atrioventricular block and hypotension.	Bronchospasm is rare – in cases of asthma, recommend beta-1 selective agents (avoid carvedilol). Contra-indicated in acute cardiac failure and a history of severe bronchospasm.
Carvedilol	Not available	3.125–50 mg twice daily.		
Metoprolol	2.5–10 mg intravenous bolus (repeated as required).	100–200 mg total daily dose (according to preparation).		
Nebivolol	Not available	2.5–10 mg once daily or split.		
Esmolol	0.5 mg/kg intravenous bolus over 1 min; then 0.05–0.25 mg/kg/min.			
Calcium-channel blockers				
Diltiazem	15–25 mg intravenous bolus (repeated as required).	60 mg 3 times daily up to 360 mg total daily dose (120–360 mg once daily modified release).	Most common reported adverse symptoms are dizziness, malaise, lethargy, headache, hot flushes, gastrointestinal upset and oedema. Adverse effects include bradycardia, atrioventricular block and hypotension (prolonged hypotension possible with verapamil).	Use with caution in combination with beta-blockers. Reduce dose with hepatic impairment and start with smaller dose in renal impairment. Contra-indicated in LV failure with pulmonary congestion or LVEF <40%.
Verapamil	2.5–10 mg intravenous bolus (repeated as required).	40–120 mg 3 times daily (120–480 mg once daily modified release).		
Cardiac glycosides				
Digoxin	0.5 mg intravenous bolus (0.75–1.5 mg over 24 hours in	0.0625–0.25 mg daily dose	Most common reported adverse symptoms are gastrointestinal	High plasma levels associated with increased risk of death. Check

3) CHA2DS2-VASc score

(see below table from Quick reference guide: Atrial fibrillation Information for the health practitioner, government of WA August 2014)

Table 2: CHA2DS2-VASc, a more precise stroke risk calculator

Major Stroke Risk Factors Previous stroke, transient ischaemic attack (TIA),or systemic embolism Age ≥ 75 years	**Clinically relevant non-major stroke risk factors** Heart failure Moderate to severe LV systolic dysfunction (LV EF < 40%) Hypertension and /or Diabetes mellitus Female sex and/ or Age 65–74 years Vascular disease	
Letter	**Risk Factor**	**Score**
C	Congestive heart failure/ left ventricular dysfunction	1
H	Hypertension	1
A	Age ≥ 75	2
D	Diabetes mellitus	1
S	Previous Stroke/ TIA/ thromboembolism.	2
V	Vascular disease (eg. prior myocardial infarction, peripheral artery disease, or aortic plaque)	1
A	Age 65–74	1
Sc	Sex category (i.e. female sex)	1
Note: maximum score is 9 since age may contribute 0, 1, or 2 points		**9**

Adapted from Camm, Kirchoff et al, 2010[3]

Annual Stroke Risk Based on CHA_2DS_2-VASC scoring system[4]

The expected stroke risk rate is:

- 0.0%/yr in those people with a CHA2DS2-VASC of 0
- 1.3%/yr with score of 1
- 2.2%/yr or higher with score of 2 or more

CHA2DS2-VASc score=1: Due to the lack of clinical trial evidence for preferred antithrombotic treatment in patients with a CHA2DS2-VASc score of 1, the 2014 ACC/AHA/HRS guidelines6 recommend that no antithrombotic therapy or treatment with an OAC or aspirin may be considered in these patients. Further, female patients who are aged <65 years with lone AF will have a CHA2DS2-VASc score of 1 by virtue of their gender. They are generally at low risk and the option of no antithrombotic therapy should be considered4.

Treatment recommendations should always be based on an informed discussion with the patient taking into account the likely net clinical benefit of antithrombotic treatment.

SAQ 8

A 6 year old girl has been brought to your ED with history of fall from monkey bars on to outstretched hand. She is complaining of pain in the forearm and elbow.
The Xrays of the elbow are in the prop booklet.

Q1. List 4 relevant positive findings on the Xrays provided. (4 marks)

a)ant fat pad- sail sign
b)post fat pad
c)displacement of ant humeral line/ fracture site visible, post displacement with intact post cortex
d)fracture seen in the AP view

Q2. What is your likely diagnosis? (2 marks)

a) Supracondylar- Gartland 2

Q3. List three acute complications of this type of injury. (3 marks)

a) Vascular- brachial artery
b)neuro- median nerve, radial nerve
c)Volkmans contracture – 12-24 hrs

Q4. List 3 immediate management steps for this patient's presentation. (3 marks)

a)Analgesia
b)Backslab
c)urgent ortho consult

SAQ 9 - Priapism

Answers

Answers:

(a) History of perineal trauma (penile #, coital injury), spinal cord injury
Prior episodes
PMH_x – sickle cell disease, thalassaemia, multiple myeloma, malignancy
Prior urologic surgery / prostheses
Medications (anticoagulants, impotence agents, illicit drugs, anti-hypertensives, anti-psychotics)

(b) IV opiods
Dorsal penile nerve block / circumferential penile block

(c) Aspiration of corpus cavernosum
Cold saline irrigation
Injection of α-agonist (eg phenylephrine, adrenaline)
Urologic consult for surgical penile decompression if above measures fail

SAQ 10 Answers/Suggested Responses

Bold indicates key point/s which should be mentioned to score highly

You are the Emergency Medicine Consultant working in a rural emergency Department located in a busy tourist area.

Ambulance communications have just notified you of a crash on the highway approximately 25 km from your town.
A tourist bus has rolled over after colliding with a petrol tanker.
The tanker was engulfed in flames and the driver is deceased.

There are bystander reports of multiple casualties.
Emergency services are en route to the scene.

It is 4pm on a Monday afternoon.

1. What key questions do you need to ask during your next communication with the Emergency Services? (4 marks)

Number and type of casualties including if adult or paediatric at scene
Number expected at my hospital and ETA

Or similar questions to give general idea of expected number and type of patients
"ETHANE" format also acceptable
Exact Location of incident
Type of incident
Hazards Present
Access and Egress
Number and type of casulaties present
Emergency Services present and required

2. The Major Incident in your region has now been upgraded to a Disaster. What are two important duties you must now perform? (2 marks)

Activate the Hospital Disaster Plan
Notify key stakeholders in the Emergency Department, the hospital and the region

4. Your Emergency Department is now expecting 25 patients from the bus crash. 5 critically injured - all adults, 3 with burns and 17 less injured including 6 children. How will you prepare your Emergency Department for the expected influx of patients?

Staff – notify all staff, prepare for arrival, assign roles and teams, get help early, notify whole of hospital including executive/admin on call, ensure hospital teams are prepared - laboratory, transfusion, radiology, theatre, anaesthetics, surgeons and other specialties, ICU, nursing co-ordinator, orderlies, security, admin/clerks
Areas – empty/decant department, prepare Resus Rooms, clear waiting room, utilise other areas such as Short Stay Unit or Outpatients Department for walking wounded, admit stable pts to available vacant beds or discharge, morgue
Equipment – obtain additional resus equipment, ventilators, monitors, prepare fluids, source blood and massive transfusion packs, ultrasound ready, pharmaceuticals and medical supplies, linen
Disaster Specific - Organise Disaster Triage Tags (Smart Tags), Disaster tabbards for staff, radios and other communication systems, liase with hospital management and disaster team

Other –media, staff rostering, social worker, food
Assist junior doctors with discharges

Ideally broad topics with one or two points to emphasise importance
Must include different categories of preparation

Booklet 2 – Answers

Question 21 (12 marks)

You are the duty Consultant in a tertiary ED. An intern is about to assess a 24 year old man who has been brought to the ED by his brother with suicidal ideation following the break-up of a long term relationship. He has a past history of an anxiety disorder and depression, with several similar presentations. He is on a regular antidepressant. He has no other medical problems.

The intern asks for advice on how to proceed with the assessment.

i) List SIX (6) factors which suggest the patient is at HIGH risk of suicide. (6 marks)

4 of 6 to pass

- High intent/ continual or specific thoughts
- Definite plan
- Hopelessness
- Severe depression
- Psychosis/ command hallucinations/ delusions about dying
- Past attempts/ high lethality attempts
- Impulsivity/ changeability/ lack of rapport
- Intoxication/ substance abuse/ dependence
- Male gender
- Recent psychiatric hospitalisation
- Access to means
- Lack of supportive relationships/ social isolation
- Conflicting information/ unable to verify information

The patient is referred to the psychiatry registrar for a mental health assessment. The registrar asks if the patient is "medically cleared?" The intern asks you if they need to take bloods on the patient.

ii. List THREE (3) low risk criteria which must be fulfilled to enable the patient to be "medically cleared" without investigations. (3 marks)

2 of 3 to pass

- Age 16-65 years
- No acute physical health problems (including trauma, ingestion or drug side-effects)
- No altered level of consciousness
- No evidence of physical cause for the acute presentation /normal vitals and examination
- Not the first or significantly different psychiatric presentation

The patient feels better after discussing his concerns, denies further suicidal ideation, and asks if he may leave before mental health review to have follow-up with his GP. The intern asks you if the patient should be "detained".

iii. List THREE (3) criteria which must be satisfied before a patient can be placed on an involuntary treatment order under the relevant mental health act. (3 marks)

Bold plus 1 other to pass

- **Patient has a mental illness (essential ie 0 marks if not in)**
- Without the treatment there is risk to the health and safety (harm) of the patient, or the safety of others (harm)
- Patient does not have decision making capacity/ refuses treatment
- Treatment will be appropriate and effective
- There is no less restrictive means

SAQ 23 Pregnancy – Massive Post Partum Haemorrhage [Management, massive transfusion, ROTEM]

33 year old female, G2P2 has been transferred from home by local ambulance services after a planned home birth of her second child at 41+5/40. The labour was prolonged, however, a healthy baby delivered by the midwife. It is nearly 3 hours after delivery of the baby, and the placenta has yet to be delivered. The midwife was concerned and convinced the patient to be transferred to the emergency department.

1. List the four most common causes of post partum haemorrhage in this patient:

i. Uterine Atony
ii. Retained placenta / placental fragements
iii. Trauma (uterine rupture/laceration; lower genital tract laceration)
iv. coagulopathy (hereditary or consumptive)

On arrival to the resus room it is noticed she is extremely pale and diaphoretic, there is a large amount of blood on the sheets. Her first observations are as follows:

Respiratory Rate 28 breaths per minute

SpO2 95% on 6L via Hudson mask

HR 146 beats per minute

BP 68/52 mmHg

E3V4M5 = 12/15

2. What are your management priorities and why (14 marks):

i. establish definitive large bore IV access for fluid resuscitation → evidence of hypovolemic shock (hypotension, tachycardia)
ii. early specialist, multi-disciplinary referral (gyne/obstetrics, theatres, gen surgery) → recognition of life threatening bleeding requiring definitive treatment
iii. massive transfusion protocol → recognise hemorrhagic shock and need for potential large volume blood product quickly
iv. attempt to deliver placenta → physically stop haemorrhage
v. oxytocin 10-40mg → pharmacological stimulation for uterine atony
vi. coagulation studies / ROTEM → titration of appropriate blood product for coagulopathy associated with massive haemorrhage and loss of endogenous clotting factors

3. What secondary treatments may be instituted, list five (5) (5marks):

i. Ergometrine 200mcg IMI
ii. Recombinant activated factor VII

iii. Tranexamic acid (1g over 10mins)
iv. Uterine compression / massage
v. Balloon tamponade into uterine cavity
vi. Interventional radiology for uterine artery embolization
vii. Abdominal hysterectomy

SAQ 24

You have received a complaint from a patient who underwent procedural sedation in your emergency department. The patient had a pulseless, dislocated ankle.

The sedation was carried out by one of your competent senior registrars in the resuscitation room during a night shift.

During the sedation the patient aspirated and had a course of antibiotics during his hospital stay. The patient has complained that he "was not told about any risks of having sedation that night".

a. In dealing with the complaint describe the features of your immediate response (3 marks)

Early contact w complainant
Neutral, empathetic, non-judgmental
Express regret without liability
Treat the complaint seriously
Senior staff/consultant to handle

b. Fill in the table below to demonstrate what phases you will need to go through to finalise the answer to the complaint (8 marks)

Step of complaints process	Example of elements included in that stage
Investigation	**Look through documentation**
	Consent form
	Interview staff involved
	Root cause analysis
Staff counselling	**acknowledge feeling of guilt**
	counsel regarding any identified errors
	+/- need for notification of defence organisation
	Write down recollections of events if not documented
Teaching and training	**Staff teaching on procedural sedation**
	Consent teaching
	Airway requirements for trainees performing sedation
Q & A	**M and M**
	Need for protocol/update protocol
	Consent compliance
Involving complaints department	Notification
	Provide documentation
	Organise meeting if required
Answer to complainant	Finalise reply in a timely fashion

	Written reply
	Refer to the complaints department

Question 25

4 yo child arrives by ambulance to your ED with acute exacerbation of asthma. They are currently receiving nebulized Salbutamol on high flow oxygen and in a monitored bed.

1) List 4 features of acute severe life threatening asthma (4 marks)

a) **marked tachycardia or bradycardia**

b) **agitation, confusion, drowsiness (altered conscious state)**

c) **maximal/marked work of breathing, (accessory muscle use/recession**
d) silent chest, cyanosis, exhaustion, inability to speak /talk

(Must have a, b, c or something similar and one other to get full marks)

You assess the child as having severe life threatening asthma and commence initial treatment with inhaled bronchodilators and steroids. As there is only minimal improvement you commence a second line of treatment

2) Complete the table with drug dose and 2 adverse effects for the following second line treatment drugs. (6marks total)

Second Line Treatment	Dose (1Marks)	2 Adverse Effect (1marks)
IV Aminophylline	LD: 10mg/kg over 60mins	Tachycardia(arrhythmias) Nausea and vomiting tremors
IV Magnesium Sulphate	0.1-0.2 mmol/kg 50mg/kg (0.1ml/kg of 50% over 20 mins)	Hypotension Bradycardia Vomiting
iv Salbutamol	LD: 5mcg/kg/min for 1hr as load 1-2mcg/kg/min	Hypokalemia Metabolic/lactic acidosis Tachycardia, nausea headache etc

		(Salbutamol toxicity)

! mark for each dose and SE must get units correct.

Despite maximal therapy this child requires intubation

3. List 4 potential complications you are aware of related to intubation in this child with asthma (2 marks)

Pneumothorax, Hyotension, Barotrauma, Cardiac Arrest etc
(as well as generic failed intubation, anaphylaxis, dislodged tube, failed equipment etc)

Must have at least one asthma specific potential complication to get full marks

Question 27 answers

A previously well 26 year old woman presents with a 10 hour history of gradual onset of tingling and weakness in her arms and legs. This is associated with low back ache. She has recently returned from a two week holiday in Spain, during which time she suffered a self limiting diarrhoeal illness that she attributed to the hotel food. Her vital signs are: HR=100, BP=130/80, RR=36, T=37.0

On clinical examination you suspect a diagnosis of Guillian-Barre syndrome.

List four differential diagnoses for her presentation.
(4 marks)

(**spinal cord pathology**, hypokalaemiac periodic paralysis, tick paralysis, myasthenia gravis, polio, MS, poisoning eg lead)

What further testing is indicated? Briefly justify your choices.
(4 marks)

Respiratory function testing / ABG – risk / evidence of respiratory failure
LP – aid diagnosis - expect normal cell count with possible mildly elevated protein
Stool test or serology for Campylobacter – some prognostic utility
CT brain, MRI , serum biochemistry – exclude differentials

What features on clinical examination would suggest the need for intubation and ventilation in Guillian-Barre syndrome?

(2 marks)

(bulbar weakness, inability to lift the head, upper limb weakness, tachypnoea)

Question 28 Answers

Question 28 - Answers

List 5 steps you would perform as part of your immediate management. (5 marks)

Immediate transfer to resus bay / high-visibility cubicle

Pressure immobilization bandage.

IV access

Draw blood for tests

Swab for VDK

My thoughts…..

? Half points only for –

Urgent Toxinologist / Poisons consultation.

-2 points if PIB not applied.

Use of prophylactic antibiotics is still questionable.

Based on the clinical information provided, what snake is most liley responsible for the envenomation in this case.

Taipan

Complete the table: (5 marks)

Clinical effects of Australian snakes based on definite cases of systemic envenoming.

Snake	Coagulopathy	Neurotoxicity	Systemic Symptoms	Myotoxicity	Thrombotic Microangiopathy	Cardiovascular effects
Brown	VICC	Rare and Mild	<50%	--	10%	Collapse (33%) Cardiac arrest (5%)
Tiger	VICC	Uncommon	Common	Uncommon	5%	Rare
Black	Anticoagulant	--	Common	--	--	
Death Adder	--	Common	Common	--	--	--
Taipan	VICC	Common	Common	Rare	5%	Uncommon
Sea Snake	--	Uncommon	Common	Common	--	--

Question 29 – answers

A 35 year old male is brought in by ambulance confused, agitated, tachycardic and hyperthemic. He was found in the city Botanic Gardens half naked on a hot summer's day behaving bizarrely. He has a history of schizophrenia and metamphetamine abuse. Records indicate his is being treated with depot haloperidol and paroxetine.

What are three likely causes for this patient's condition? **(3 marks)**

1. Drug / Plant toxicity
2. Heat Stroke
3. CNS infection
4. Post-ictal

Reviewing the medical record reveals he has previously been admitted for various drug ingestions. What toxidromes may cause this patient's symptoms **(4 marks)**

1. Serotonergic syndrome
2. Neuroleptic malignant syndrome
3. Sympathomimetic syndrome
4. Anticholinergic syndrome

What single finding best distinguishes benztropine overdose from metamphetamine toxicity? **(1 mark)**

1. Absence of sweating in benztropine

Further information about the patient indicates that both of his medications were altered last month by his community psychiatrist and you wonder if they could be implicated in this presentation. What physical signs might distinguish what may be the culprit agent? **(6 marks)**

Serotonergic syndrome (Paroxetine)	Hypertonia Diaphoresis Ocular clonus, Myoclonus
Neuroleptic malignant syndrome (Haloperidol)	Hypertonia Diaphoresis Parkinsonian features