

SAQ 1

- a) List five diagnostic criteria for Kawasaki Disease (KD) in a 4 year old boy with fever.

High fever > 5 days

Bilateral non-exudative conjunctivitis

Skin changes – oedema, desquamation

Cervical LAN

Polymorphous rash

Strawberry tongue

- b) All diagnostic criteria for KD are met in this patient. List and justify 3 investigations in this child.

ECHO – cardiac involvement

ASOT/Anti DNAase B

Platelet count (marked thrombocytosis common in 2nd week illness)

- c) List three possible treatment options for KD in this patient.

High dose aspirin 3-5 mg/kg

IV steroids

IV Ig

SAQ 2

A 3 month old girl is brought into ED with pallor and lethargy for the past hour. She has had fevers and URTI symptoms for the past 3 days. Her observations are as follows:

GCS 15/15 but floppy/lethargic

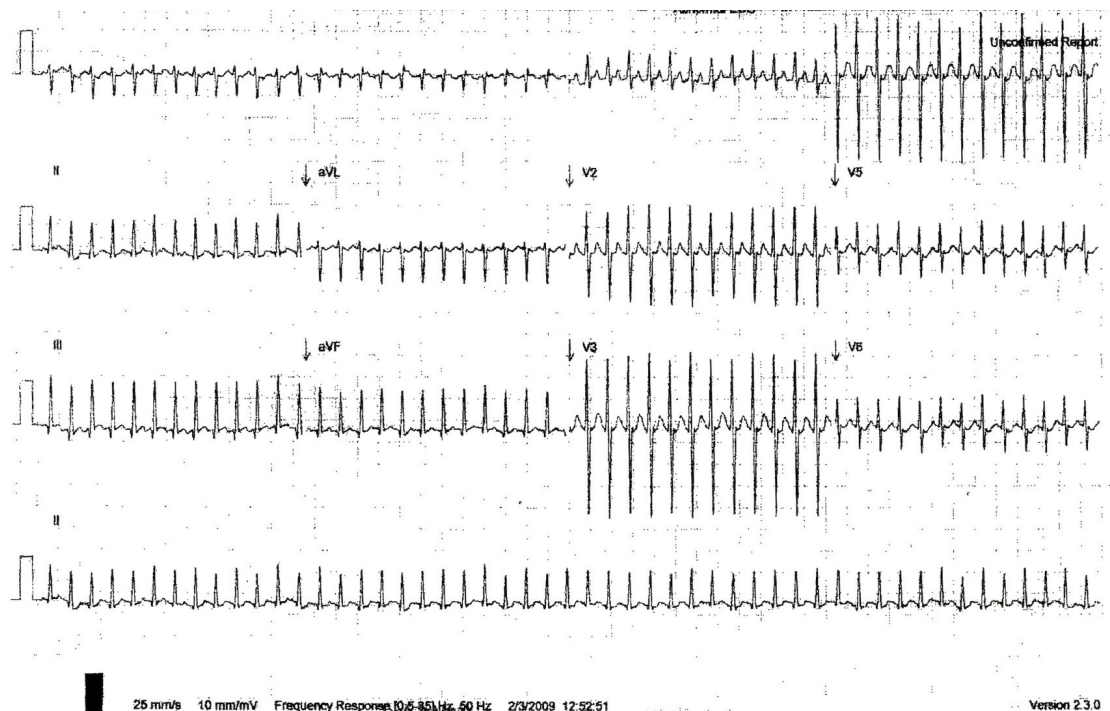
HR 220

BP 75/45

CRT 2 seconds

Sats 95% RA

Temp 38.2 C



This is her ECG.

- a. What is the most likely diagnosis?

SVT

- b. What are two features of the ECG that support this diagnosis?

Rate > 150bpm

No P waves visible

Narrow complex tachycardia

- c. List 3 treatment options in the order of escalation that you would perform them.

Ice on face

Adenosine 100mcg/kg, then 200mcg/kg, then 300mcg/kg

DC cardioversion

- d. List 4 investigations you would perform in the ED with a justification.

CXR – cardiomegaly, DCM secondary to viral illness

BSL

Septic screen (FBE, EUC, Urine dip) – to exclude sepsis/infection as cause of SVT

SAQ 3

A 4 year old girl presents with anaphylaxis after a bee sting. She is poorly responsive, pale and floppy. She has no stridor but widespread wheeze on chest auscultation.

Her observations are: HR 152, BP 68/42, RR 56, T 37, Sats 92% on 10L oxygen.

- a. List five immediate steps in your management of this child, including doses where necessary.

Move to resuscitation room, full monitoring

Remove beesting

Lie child down (hypotensive), consider raising legs

IM adrenaline 150mcg into lateral thigh (0.01ml/kg of 1:1000)

Fluid bolus 20ml/kg Normal saline – aim BP > 90mmHg

Hydrocortisone 4mg/kg IV

- b. The child remains poorly responsive after these measures and you decide to intubate. What two sizes of ETT will you prepare for intubation?

ETT = age/4 + 4 = 5, 4.5 (one size smaller due to likely oedema airway)

- c. Her BP remains low post-intubation and two fluid boluses and her peripheries are cold. What inotrope will you use and why? Give dose.

Adrenaline 0.1mcg/kg/min – combined inotropic effect and anaphylaxis treatment. Child is in cold shock, so noradrenaline not indicated.

SAQ 4

A 4 week old child is brought to ED by his concerned parents with four hours of increasing breathing difficulty. He has a four day history of increased cough and conjunctivitis. On arrival, he is triaged to resus, IV access obtained and

monitored. He is mottled and lethargic. His obs are: HR 180bpm, RR 65, T 37.9 (axilla), and sats unmeasurable due to poor trace. BGL is 5.4mmol/L.

- a. List 8 differential diagnoses you would consider in this child's presentation.

Trauma
Heart disease
Electrolyte disturbance
Metabolic disturbance
Inborn error of metabolism
Sepsis
Formula dilution/overconcentration
Intestinal catastrophe/intussusception
Toxins
Seizures/CNS
NAI

Fail question if say DKA – BGL normal.
 Unlikely NAI, as parents concerned.

- b. List three initial steps in your resuscitation of this child with justification.

Oxygen to keep sats >94%
Fluid bolus – 20ml/kg of NS
Empiric antibiotics – cefotaxime 50mg/kg

SAQ 5

A 3 year old boy is brought in by his mother refusing to weight bear on his right leg. His mother says he started limping 3 days ago and now will not walk. The child appears otherwise well and has no past medical history.

- a. Fill out the following table regarding differential diagnosis of the limping child.

Diagnosis	Cause	Findings on clinical exam/posture	Typical age onset	Risk factors
Septic joint	Bacterial – staph/strep	Extremely limited ROM	Any	Diabetes
Transient synovitis	Recent viral illness	Leg held in flexion/abduction	3-8 yrs	Nil
Perthes	Avascular necrosis	Limited int rotation and abduction. May be shortened leg.	2-12 yrs	Low birth weight Male
SCFE*	Mechanical slippage of epiphysis	Externally rotated and shortened	10-14 yrs	Obesity Renal/thyroid issues

* SCFE – slipped capital femoral epiphysis

- b. Give three tests you would order in this child and justify.

FBE/CRP – to exclude septic arthritis
X ray – to exclude fracture/Perthes
Ultrasound – to exclude effusion/infection, but rarely used
CT/MRI – to exclude septic joint/occult fracture
Bone scan – to exclude SCFE, septic joint, Perthes

SAQ 6

A 6 year old presents after running into a coffee table, sustaining a laceration above her right eyebrow. There was no loss of consciousness and no other injury. The wound needs sutures. Complete the following table of anaesthetic options in this child (one example per box).

Medication	Dose/route	Advantage	Disadvantage
Midazolam	PO/IV/IN 0.2mg/kg	Anxiolytic	No analgesia
Ketamine	IV 1.5mg/kg	Rapid onset	Vomiting/salivation
Propofol	IV 1-2 mg/kg	Rapid onset	No analgesia
Nitrous oxide	30-50% inh	Rapid on/off	Vomiting
Fentanyl	IN 1.5mg/kg	Analgesia	Respiratory depression

SAQ 7

A 6 year old child with no significant PMHx presents with abdominal pain and vomiting. Her observations are BP 74/45, HR 158 bpm, RR 50, T 37, Sats 100% RA.

- Give three differential diagnoses for this presentation.

DKA

Sepsis (less likely given afebrile)

Addisons/other metabolic

Poisoning

Intestinal catastrophe

- Her BGL is "high" and ketones are present in her urine. List your management of her DKA, giving doses and endpoints where appropriate.

Volume resuscitation – 20ml/kg NS bolus stat, then correct remaining fluid deficit over 48 hours

Change from NS to 4% and 1/5 once BGL <15

Insulin infusion – 0.1units/kg/hr. Reduce to 0.05units/kg/hr once BGL < 12

K+ replacement – aim K+ >4. Add K+ to bags of NS at rate of 10-20mmol/hr once K+ <5

SAQ 8

A 5 year old boy is brought to your major referral ED by his mother, who states he was bitten on his ankle by a snake an hour ago. He has a pressure immobilisation bandage in place. He is currently asymptomatic with stable vitals.

- Give four features on assessment that would indicate envenomation?

Early collapse suggests serious envenomation (likely brown snake)

Evidence of bleeding – cannula/bite site, GI, etc

Neuro symptoms – respiratory weakness, ptosis, CN involvement

Fang marks, local necrosis/bruising

N/V/headache/respiratory distress

- An hour later, the child remains asymptomatic. Initial investigations are normal. The PIB is removed. List the 3 criteria which need to be met for the child to be discharged.

Repeat blood tests and neuro exam at 1 hour post PIB removal

Repeat blood tests and neuro exam at 6 and 12 hours post bite

If no evidence envenomation, can be discharged then.

- c. How many hours are considered adequate observation to ensure envenomation has not occurred in Australia?

Most Australian snakes will show symptoms within 12 hours of bite.

SAQ 9

- a. List 6 medications/substances that are potentially lethal in children with only a small amount ingested?

Sulfonylureas

CCB

Beta blockers

Clonidine

Opiates

Oil of wintergreen

Camphor

TCA

Eucalyptus oil

- b. A 2 year old child presents after a suspected accidental drug ingestion. The child has been seizing for 10 minutes.

- i) Give two anti-seizure medications that may be given in this situation if IV access is established, in order of administration (with doses)

Lorazepam 0.1mg/kg

Phenytoin 20mg/kg over 20 minutes

- ii) Give two medications that may be given with neither IV or IO access, with route of administration and dose.

Midazolam (buccal) 0.5mg/kg

Diazepam (rectal) 0.5mg/kg