**Q1. A 65 year old male presents following a fall. He complains of a painful swollen left wrist.**

**An x-ray of his wrist is shown.**



**a. Describe his x-ray (2 Mark)**

**b. List 8 contra-indications to performing a Bier's block (4 Marks)**

**c. List the key steps in performing a Bier's block (8 Marks)**

**Q2. Compare and contrast the cardiac arrest algorithm for systole between neonates, children and adults. (15 marks)**

**AIRWAY**

**Neonates**

**Children**

**Adults**

**BREATHING**

**Neonates**

**Children**

**Adults**

**CIRCULATION**

**Neonates**

**Children**

**Adults**

**Q3. Regarding Massive Transfusion Protocol (10 marks)**

**a. When do you trigger the MTP? (1 mark)**

**b. What are the components of a standard MTP? (1 mark)**

**c. What ratio of components do we aim for; name the supporting trial. (2 marks)**

**d. What parameters should you monitor upon activating the MTP? (6 marks)**

**Q4. A 2yo girl presents with her parents after running into the edge of a coffee table. She sustained a 4cm frontal scalp laceration above her left eyebrow. You are not concerned about intra-cranial head injury. Discuss the anaesthetic options in the procedural management of this child. (8 marks)**

**ANSWERS**

**A 65 year old male presents following a fall. He complains of a painful swollen left wrist.**

**a. Describe his x-ray (2 Mark)**

1 Mark for intra-articular fracture distal radius

1 Mark for dorsal angulation

No marks given for Colle's fracture

**b. List the contra-indications to performing a Bier's block ( 4 Marks)**

1/2 Mark each to maximum of 4 marks from:

Refusal of procedure

Uncooperative patient

Compromised limb circulation

Compartment syndrome of affected limb

Sickle cell disease

Ipsilateral # humerus

LA Sensitivity / allergy

Staff / area / equipment unavailable

Soft tissue injury at tourniquet site

Age <10 / Paediatric patient

Peripheral vascular disease / Raynauds

Systolic >200mmHg

Severe liver disease

Unstable epilepsy

Unable to gain bilateral iv access

**c. List the key steps in performing a Bier's block (4 Marks)**

1/2 Mark each for

1. Consent

2. Area / staff / monitoring/equipment

3. Bilateral IV access with IVC into affected hand

4. Lift affected arm to allow venous drainage + wrap upper arm with cotton wool type bandage + apply cuff

5. Inflate cuff >100mmHg above systolic and start timer (max 300mmhg)

6. Injection of local anaesthetic – Prilocaine 0.5% 0.5ml/kg (max 2.5mg/kg) slowly; monitor for LA toxicity

7. Await for anaesthesia; Perform procedure - MUA wrist

8.Deflate cuff after 20mins/within 1hr; post-procedural monitoring

**Q2. Compare and contrast the cardiac arrest algorithm for systole between neonates, children and adults. (15 marks)**

**AIRWAY**

**Neonates-**

**Children-**

**Adults-**

**BREATHING**

**Neonates- 3:1; usually respiratory cause; 60breaths pm**

**Children- 15:2; usually respiratory cause but increasing cardiac cause**

**Adults- 30:2; usually cardiac cause**

**CIRCULATION**

**Neonates- Warm and stimulate for 30secs then assess; if low apgar, open airway; if HR<100 commence IPAP at RA then increase; if HR >100 but grunting CPAP at room air then increase, then reassess; if HR <60 start 2finger compression 3:1 then reassess; if HR <60 continue and give Adrenaline 10mcg/kg UC; 100mcg/kg ETT**

**Children- encircled thumbs/ one hand; Adrenaline 10mcg/kg IV/IO**

**Adults- 2 hands, centre of chest, 1/3, full recoil; Adrenaline 1mg 1:10,000 immediately, then 4minutely**

**Q3. Regarding Massive Transfusion Protocol (10 marks)**

**a. When do you trigger the MTP? (1 mark)**

**When you suspect impending or actual haemorrhagic hypovolaemic shock; TASH Trauma Associated Severe Haemorrhage score which includes sbp, hr, fast scan**

**b. What are the components of a standard MTP? (1 mark)**

**PRBCs**

**FFP**

**TXA 1g IV stat, then 1g IV 3hrs (to be given within 3hrs)**

**Cryoprecipitate for FBG <1**

**FVIIIa 100mg/kg if uncontrolled haemorrhage**

**c. What ratio of components do we aim for; name the supporting trial. (2 marks)**

**1:1:1 PRBCs/FFP/Pooled plts**

**d. What parameters should you monitor upon activating the MTP? (6 marks)**

**Clinical- SBP >90 (permissive hypotension), T>35, mentation**

**Biochemical- pH >7.2, Lac 4, Ca >1.1**

**Haematological- plt >50 (>80 if pregnant, >100 if head injury), int >1.5, appt <1.5, fbg >1.5**

**Q4. A 2yo girl presents with her parents after running into the edge of a coffee table. She sustained a 4cm frontal scalp laceration above her left eyebrow which requires suturing. You are not concerned about intra-cranial head injury. Discuss the anaesthetic options in the procedural management of this child. (8 marks)**

OPTION 1. Topical laceraine, continuous nitrous oxide with full cardiac monitoring/resus trolley etc, suture.

OPTION 2. Ketamine 4mg/kg IM, wait for effect, insert IVC and titrate with Ketamine 0.25mg/kg IV, Midazolam 0.15mg/kg IV to prevent emergence phenomena with full cardiac monitoring/resus trolley etc, suture.

OPTION 3. Midazolam 0.15mg/kg IN, wait for effect, insert IVC and titrate with Ketamine 0.25mg/kg IV with full cardiac monitoring, resus trolley etc, suture.

OPTION 4. General anaesthetic with gas induction, insert IVC, suture by plastics.