SIMULATION OSCE (FACEM) – DOUBLE STATION

You are the consultant in a paediatric tertiary emergency department. A mother has brought in her 7-day old baby boy Joshua due to difficulty breathing and complaints of poor feeding.

The mother tells you that the pregnancy was uncomplicated with normal vaginal delivery of a term baby weighing 3.2kg.

Her child was feeding well on discharge but over the last 2 days has not been able to feed for longer than 5 mins and appears to be struggling to breathe. He has only had 2 wet nappies today.

- The child has been brought directly into the resuscitation bay as the nursing staff were concerned that he looked cyanotic.

You are to:

1) Team lead the resuscitation and manage the child accordingly
2) Hand over to inpatient admitting team

There will be a registrar and 2 nurses in the room who are competent with clear instructions.

Domains:

Leadership and prioritisation

Communication

Medical expertise

DUCT DEPENDANT CONGENTIAL CARDIAC DISEASE

PROGRESS OF THE SCENARIO

W: 3kg

E: 12J

T: size 3.5/4 ETT

F: 60mL NS

M: 0.5mg midazolam

A: 0.3mL 1: 10,000 Adrenaline

G: 6mL 10% dextrose

0-2min: Assign roles

Brief discussion with mother

PPE

Monitoring: RR 50, sats 75%RA (post ductal), sats 95% (pre ductal), HR 160, SBP 70, alert, 36 deg

Achieve IV/IO access

2-7min: A-E assessment

A: patent, not protected. No stridor or signs of obstruction. Position should be neutral

B: laboured breathing, tachypneic, accessory muscle use, cyanotic

Apply high flow oxygen therapy and plan for intubation but acknowledging high risk

If CXR performed (attached) – lung fields are clear, cardiomegaly

C: tachycardic, borderline hypotensive, cap refill 6s, cool to touch, peripherally shut down

Cardiac murmur present

IV access and bloods collected. VBG (attached)

IVF bolus with nil improvement of haemodynamics

If ongoing IVF bolus given, patient will get increasingly breathless / APO

ECG shows sinus tachycardia and RBBB (attached)

D: alert but appears tired, PEARL 3mm, BSL 6

E: afebrile, nil evidence of rash

Recap: Unwell baby with undifferentiated shock – consideration for sepsis, cardiogenic, metabolic causes.

IV antibiotics – cefotaxime 50mg/kg + ampicillin 50mg/kg + gentamycin 7mg/kg

7-12min: If nil consideration for prostaglandin infusion child will continue to deteriorate

PGE1 infusion: 0.05mcg/kg/min. Maintenance dose may be as low as 0.01mcg/kg/min

Limit oxygen therapy

Cautious use of IVF as can worse cardiac failure

Prompt from faculty if nil consideration for congenital cardiac disease

Can call NICU for advice

Consideration of adrenal insufficiency (**high K, low Na**, low BSL) and empirical steroids

12-15min: **If progressing well then:**

Child continues to deteriorate despite above if initiated – will need to prepare to intubate

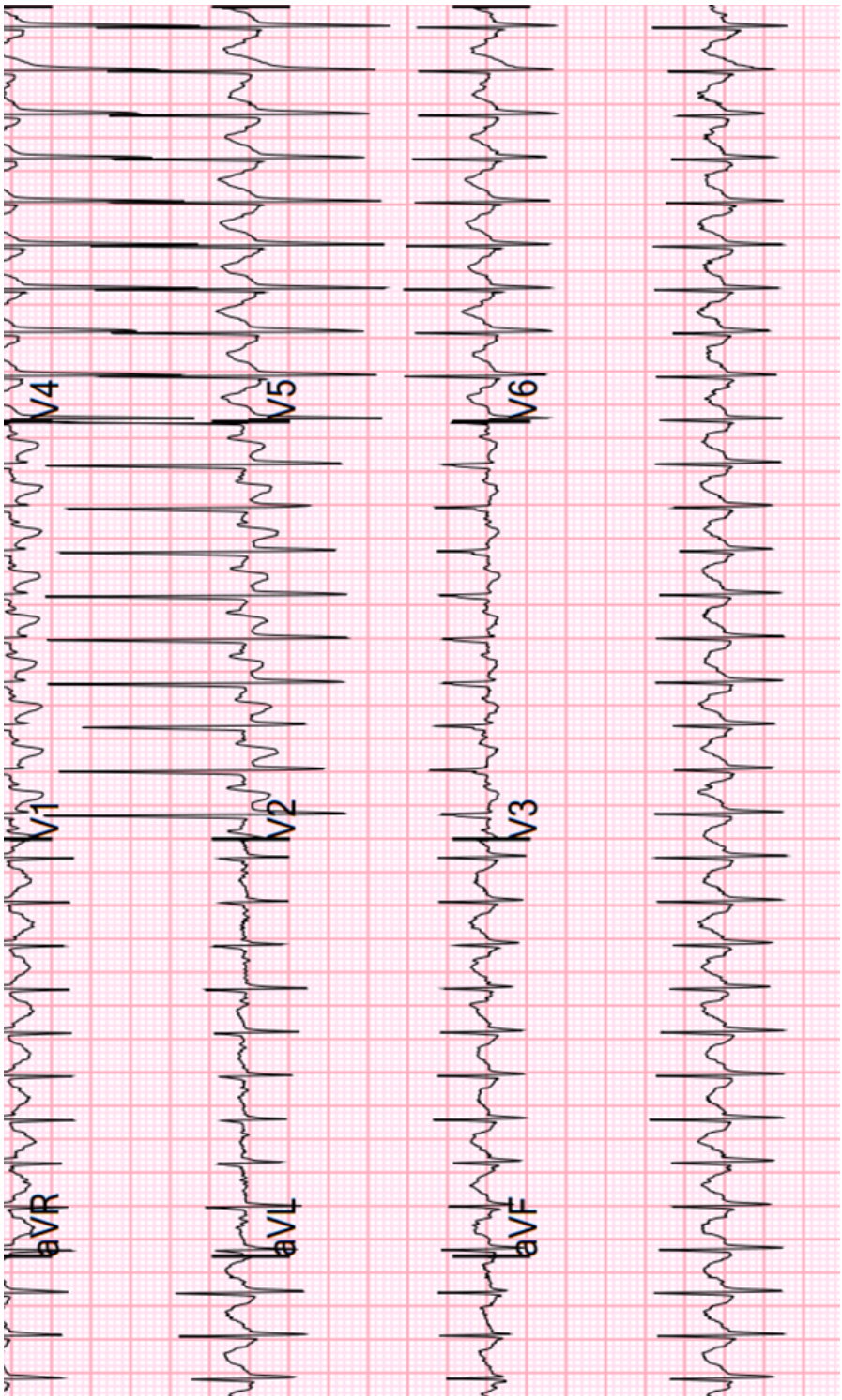
High risk – call for anaesthetics support who are not available

Atropine premedication

Plan A, B, C

Size 1 blade, size 4 ETT, insert 12cm

15-17min: Hand over to cardiology / NICU


V4
V5
V6
V1
V2
V3
aVR
aVL
aVF

SIMULOMETER SBL900 FLIX

SBL935 WMDSIMA/B 00:00 00/00/2015

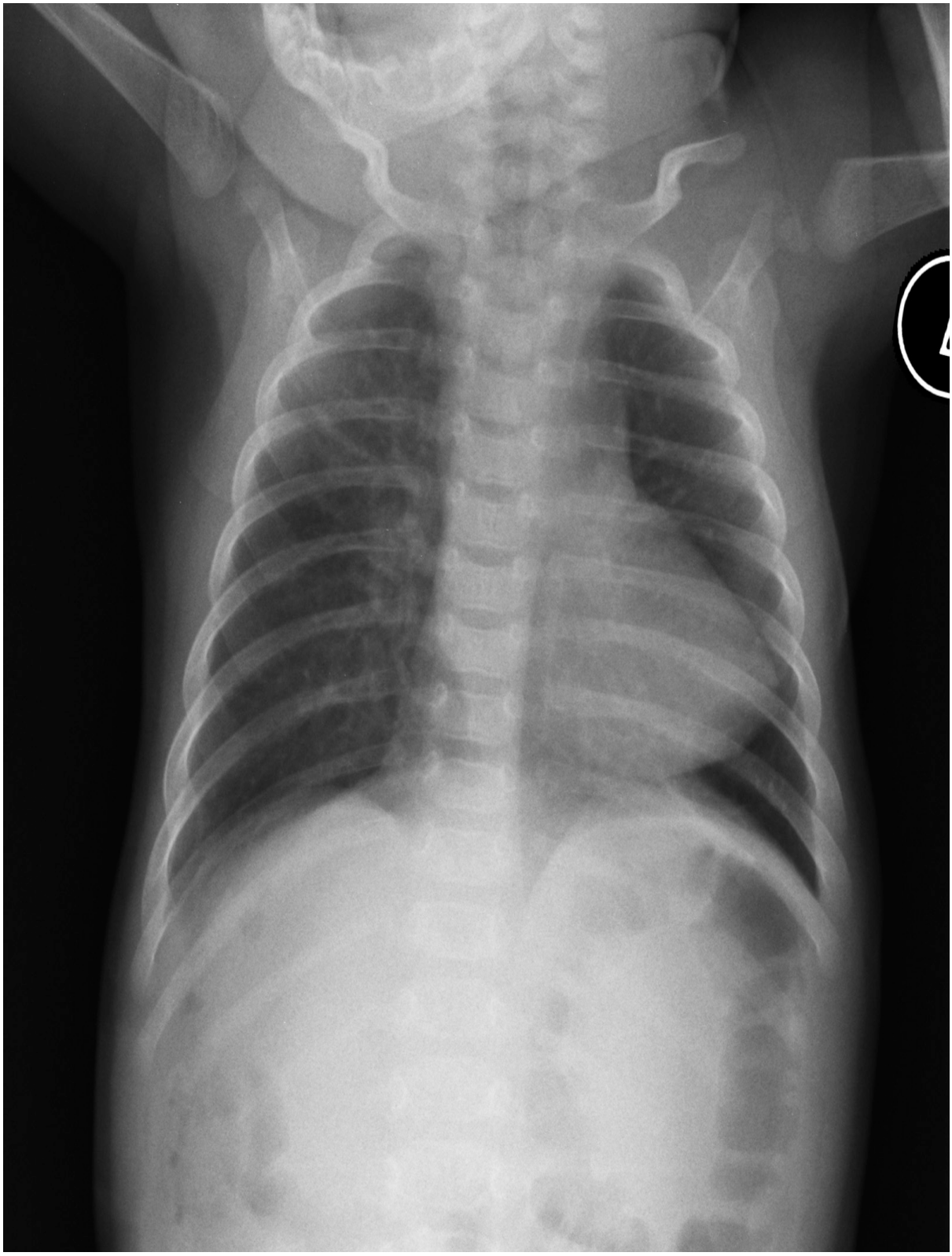
PATIENT REPORT Syringe—S 195uL Sample#12345

Identifications

Patient ID	12345
Last Name	Smith
First Name	Jason
D.O.B	
Sample type	Venous
FiO2	100%

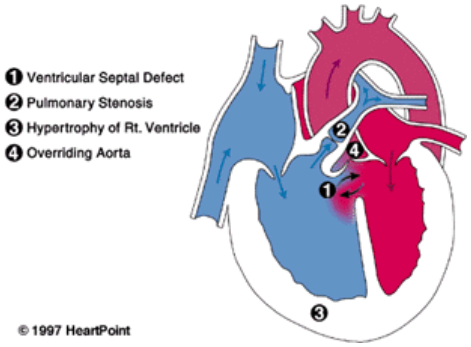
Blood Gas Values			
pH	7.20	mmHg	(7.35-7.45)
pCO2	25	mmHg	(35.0-45.0)
pO2	60	mmHg	(75.0-100)
Acid Base Balance			
*c*HCO3	16	mmol/L	
*c*Base(B)*c*	-7	mmol/L	(-3.0-3.0)
Electrolyte Value			
*c*K	6.2	mmol/L	(3.4-5.5)
*c*Na	130	mmol/L	(136-146)
*c*Ca	1.15	mmol/L	(1.15-1.30)
*c*Ca (7.4)*c*		mmol/L	
*c*Cl	95	mmol/L	(94-107)
Metabolite Values			
Glu	6.0	mmol/L	(3.9-5.8)
Lac	5.0	mmol/L	(0.5-2.0)
Oxygen Status			
*ct*Hb	160	g/L	(130-180)
O2	90	%	(95.0-100)
P50e		mmHg	
pO2(a/A)*e*		%	
FMetHb	1.0	%	(0.0-1.5)
FCOHb	1.0	%	(0.0-1.5)
P50(st)*d*		mmHg	
FShunt*e*		%	
FO2Hb		%	
Hct*c*		%	

Notes

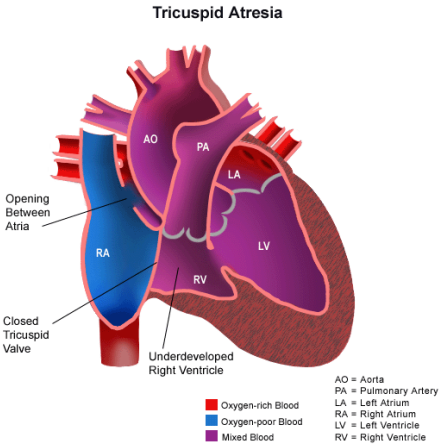


DUCT DEPENDENT LESIONS

- Tetralogy of Fallot



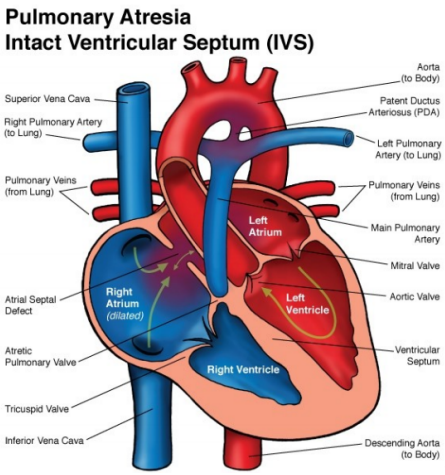
- Tricuspid atresia



HYPEROXIA TEST

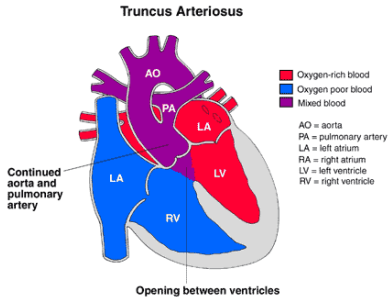
If the cause of cyanosis is non cardiac the arterial PaO_2 will increase to >100mmHg on exposure to 100% oxygen. If there is a cardiac cause for cyanosis, the PaO_2 will remain below 100mmHg

- Pulmonary atresia or stenosis

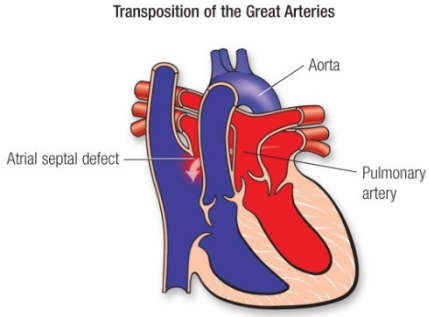


DUCT INDEPENDENT LESIONS

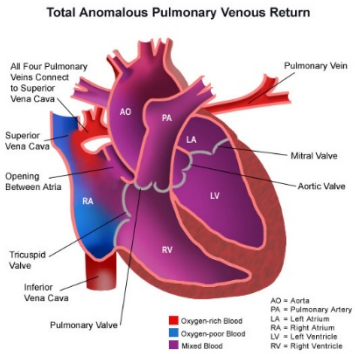
- Truncus arteriosus



- Transposition of the great arteries



- Total anomalous pulmonary venous return



- Hypoplastic left heart syndrome