QUIZ 30th Sept 2020 (answers below)

1. **What is the utility of a lateral CXR?**

2. **What is the hilar point?**

3. **What is your differential diagnoses list for a floppy baby?**

4. **How does congenital adrenal hyperplasia present?**

5. **Describe and interpret the following blood gas analysis.**

Blood Gas Values			
↓ pH	**6.955**		[7.350 - 7.450]
↑ pCO_2	**90.2**	mmHg	[32.0 - 45.0]
↑ pO_2	**273**	mmHg	[75.0 - 105]
Oximetry Values			
*c*tHb	**143**	g/L	[130 - 180]
sO_2	**98.0**	%	[95.0 - 99.0]
↑ *F*COHb	**2.3**	%	[0.0 - 1.5]
*F*MetHb	**1.1**	%	[0.0 - 1.5]
Electrolyte Values			
↓ cNa^+	**128**	mmol/L	[137 - 146]
↑ cK^+	**8.0**	mmol/L	[3.5 - 5.0]
cCa^{2+}	**1.25**	mmol/L	[1.15 - 1.30]
↓ cCl^-	**90**	mmol/L	[98 - 106]
Metabolite Values			
↑ *c*Glu	**21.7**	mmol/L	[3.0 - 7.8]
↑ *c*Lac	**8.3**	mmol/L	[0.0 - 2.2]
↑ *c*Crea	**632**	µmol/L	[60 - 120]
Calculated Values			
ABE_C	**-16.0**	mmol/L	[-]
$cHCO_3^-(P)_C$	**19.0**	mmol/L	[-]

Notes

↑	Value(s) above reference range
↓	Value(s) below reference range
c	Calculated value(s)

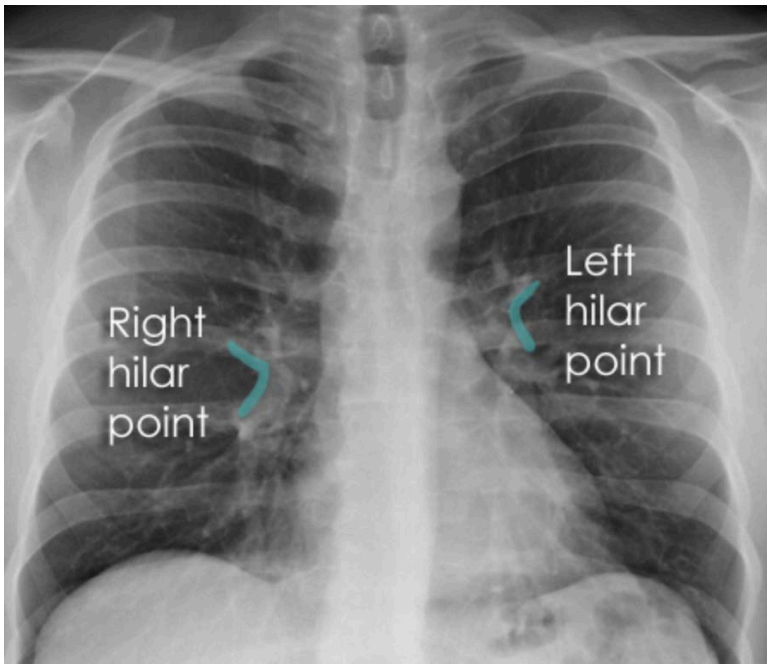
QUIZ answers 30th Sept 2020

1. **What is the utility of a lateral CXR?**

i) Localise a lesion ont he frontal CXR
ii) Clarify lobar collapse/consolidation
iii) Look at the retrosternal or retrocardiac space
iv) Confirm the presence of encysted fluid in the oblique fissure

2. **What is the hilar point?**

The hilar point is formed by the outer margins of the superior pulmonary vein and the descending pulmonary artery as they cross. It normally appears as a K or C shape. The left hilum is normally 1-2cm higher than the right.
Increased density or loss of the K shape of the hila can indicate lymphadenopathy or mass. Atelectasis can pull the hila and displace the hilar point towards the pathology.



3. **What is your differential diagnoses list for a floppy baby?**

There are lots of mnemonics out there. The one I grew up using is THE MISFITS

T Trauma
H Heart disease
E Endocrine – Congenital adrenal hyperplasia

M Metabolic – hypoglycaemia
I Inborn errors of metabolism
S Sepsis
F Formula mishap
I Intestinal – malrotation
T Toxins
S Seizures

4. **How does congenital adrenal hyperplasia present?**

Congenital adrenal hyperplasia causes an acute salt losing crisis which presents between 3-5 weeks of age with non specific symptoms of altered mental status and shock. There may be skin hyperpigmentation due to increased ACTH secretion and cliteromegaly in females. Mineralocorticoid deficiency causes hyponatraemia and hyperkalaemia. Glucocorticoid deficiency causes hypoglycaemia and metabolic acidosis.

5. Describe and interpret the following blood gas analysis.

pH	*6.955*		*Profound acidosis*
pCO_2	*99.2*	*mmHg*	*Hypercarbia so there is a respiratory acidosis* *This increase of 60mmHg (from normal of 40mmHg)* *Would acutely increase HCO_3 by 6mmol/L to 30mmol/L* *pCO2 100mmHg + HCO_3 30mmol/L = pH 7.1* *The pH is more acidotic than by pCO_2 99.2mmHg* *So there must be concurrent metabolic acidosis*
HCO_3^-	*19*	*mmol/L*	*This is a calculated value from pH and CO_2* *It is 11mmol/L lower than it should be (30mmol/L)* *Consistent with metabolic acidosis*
Anion gap			*(Na 128 – Cl 90 – HCO3- 19) = 19mmol/L = HAGMA*
Delta ratio			*ΔAG/ΔHCO3- = (19 – 12)/(30 – 19) = 7/11 = 0.63* *HAGMA + NAGMA*

Delta ratio	
<0.4	*= Normal anion gap metabolic acidosis*
0.4 – 1.0	*= High anion gap + normal anion gap metabolic acidosis*
1.0 – 2.0	*= Pure high anion gap metabolic acidosis*
>2.0	*= High anion gap metabolic acidosis + metabolic alkalosis*

pO_2	*273*	*mmHg*	*Hyperoxia – on oxygen therapy*
Na	*128*	*mmol/L*	*Hyponatraemia* *Corrected for hyperglycaemia = Na 133mmol/L*
K	*8.0*	*mmol/L*	*Hyperkalaemia – life threatening*
Lact	*8.3*	*mmol/L*	*Very high, potential cause of HAGMA*
Creat	*632*	*mmol/L*	*Renal failure*

➔ *Mixed respiratory and metabolic acidosis*

- *Metabolic acidosis is combined high anion gap and normal anion gap acidosis*
  - *High anion gap – ketones, lactate, uraemia, toxins – could be all these*
  - *Normal anion gap Renal or GIT – likely renal given renal failure*
- *Hyperkalaemia - warrants immediate treatment with calcium and bicarb*
- *Oxygen therapy*