**ABG case 1**

**Nanna Not So Good!**

An 89 year old woman living independently at home is brought in by ambulance with a GCS of 11/15 and a 5 day history of cough and epigastric pain treated by the GP with oral antibiotics and “strong pain killers” (?what). She has a past medical history of hypertension and type 2 diabetes (diet controlled).

***Her vital signs:***

* Temp 35.2
* HR 85
* RR 8
* BP 130/75
* BSL 7.8
* O2 Saturations 85% on 15L via NRB

***Her ABG:***

* pH 7.15
* pO2 64 (non-rebreather @ 15L – assume FIO2 0.6)
* pCO2 97
* HC03 34
* Glucose 12.5
* K+ 3.8
* Na+ 126
* Cl 91
* Albumin 26
* Hb 146
* Lactate 1.0

***Q1. What is the primary acid-base disturbance? (1)***

***Q2. Are there any secondary acid-base disturbances? Explain why? (2)***

***Q3. What type of respiratory failure does this patient have? (1)***

***Q4. Calculate the A/a gradient and PaO2/FiO2 ratio for this patient (2)***

***Q5. List your differential diagnosis in this patient (5)***

***Q6. List the electrolyte abnormalities (2)***

***Q7. If you were to correct the acidosis, what would you expect to happen to the K+level? (1)***

***Q8. List your immediate management steps for this patient? (excludes investigations) (7)***

# Question 2 – ABG’s

What did she take doc??

A 30 year old female has been brought into ED after taking an overdose of an unknown substance an unknown amount of time previously. The ambulance officers report that she is confused, has vomited and keeps mentioning something about her ears.

**Vital Signs**

**HR 112**

**BP 99/62**

**RR 34**

**Sats 100%**

**T 37.8**

**GCS 14**

**ABG analysis**

**FiO2 0.21**

**pH 7.6**

**pO2 115 mmHg**

**pCO2 20mmHg**

**Cl 98**

**HCO3 18 mmol/L**

**BE -4**

**Lactate 3.6**

**Na 135 mmol/L**

**K 5.6**

**Urea 4.5**

**Creatinine 90**

**Glucose 3.1**

**Note: Consider a normal AG to be <14**

1) What is the acid/base imbalance? (3)

2) List the electrolyte disturbances (with any correction calculations documented) (3)

3) What is the likely cause of this patients presentation (1)

4) List the most important additional investigations you would perform in this patient

5) How would you manage this patient? (4 marks)

# ABG SAQ 3

# Dis-Asthma

A 21 y/o asthmatic who has previously been admitted to ICU for asthma, presents to your department in acute respiratory distress. Her GP saw her 2 days ago and commenced prednisolone and 2 hourly nebs with a tapering salbutamol schedule. She did not present to ED as she had a bad experience in ICU previously. Her vital signs on arrival are:

HR 140

Bp 112/70

RR 32

Sats 92%

T 37.2

**ABG analysis is taken in the resus area**

FiO2 0.4

pH 7.32

pO2 65

pCO2 48

HCO3 18

BE -6

O2 Sats 92%

Lac 4.6

Cl 88

Na 142

K 3.2

Gluc 10.2

**1) What is the primary acid base disturbance? Show any calculations (2)**

**2) What secondary acid-base disturbance(s) exists? Show any calculations (2)**

**3) Calculate the A-a gradient for this patient and make a statement about this patients oxygenation (2)**

**4) List the other abnormal features of this ABG and state their likely cause?(3)**

**5) What are the management priorities now in this patient?(3)**

**SAQ ABG**

**Sweet LOL**

**Rebecca Day**

A 75 year old lady is BIBA after being found confused by her daily carers. She lives alone and there is no immediate history available. She appears clinically at least moderately dehydrated

GCS 12

BP 98/70

PR 82

O2sats 97%

RR 10

Her ABG is as follows

pH 7.35

pCO2 50

HCO3 24

pO2 113

Na 137

K 4.6

Cl 98

Glucose 50

Urea 28.7

Ketones 1.4

**Q1. What is the primary diagnosis? List the reasons for your decision (5)**

**Q2. What is the corrected Na – show working (2)**

**Q3. What are the key management priorities? (4)**