

QUESTION 1

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UNFORTUNATE QUESTION

🔔 Transcribing error from SAQ to the online version— got a Hb of 29 in the vbg instead of the 129 it was supposed to be.

MARKS

🔔 **Only marked the 1st part of the question – hence the strict pass criteria**

Pass mark of 5/6... as at fellowship level if you cannot give 6 differentials for altered conscious state in this person – please defer..🏖️

🔔 Be specific – eg – sepsis/ intracranial injury / toxic ingestion /electrolyte abnormalities are not specific

🔔 Delirium/ Type 2 respiratory failure is not a diagnosis

INTERESTING FACT

- 🧠 I read through some of the answers out of morbid curiosity even though it was out of context to the question written initially.
- 🧠 **YOU CANNOT HAVE CRITICAL ANAEMIA FROM INTRACRANIAL BLEED !!!!.. Patient will be long dead.. 🙄**

DONTS

To a list the differential diagnosis question -Don't write more than 1 answer in 1 line

- **Eg – sepsis – meningitis**(not meningitis, encephalitis, pneumonia, urosepsis) they are all from the same class – **sepsis need 1 example**

Don't use nonspecific words – wont give you any marks

- Infection – eg – sepsis (too nonspecific)
- overdose – eg –**any other substance ????? Really.....**
- **Intracranial injury ...what intracranial injury**
- toxic ingestion /electrolyte abnormalities **–cant give you a mark without you telling me what it is.**

ANSWERS

1. **Trauma** – SDH, SAH, EDH
2. **Drugs** in OD – eg: BZD overdose ,alcohol, amphetamines, any sodium channel blocker.
3. **Fluid & electrolyte imbalance** – hyponatremia, hypoCa, hypoMg.
4. **Sepsis** – CNS meningitis / encephalitis / abscess, others organs– eg pneumonia with hypoxia, empyema pyelonephritis. Any acute illness causing delirium acceptable answer.
5. Drugs in withdrawal – alcohol, bzd
6. **Metabolic** – hypoglycaemia, cirrhosis- hepatic encephalopathy , acute renal impairment with uraemia, hepatorenal syndrome.
7. Tumors / SOL – intracranial glioblastoma, metastatic lesions.
8. CVA -stroke – esp posterior circulation
9. Others – any reasonable answer causing altered conscious state

 (cannot score full marks without bolded categories for this section)

 Rest of the question

VBG

UNFORTUNATE HB WAS TRANSCRIBED AS 29

⚠️ A VBG is done and is as follows:

⚠️ PCO ₂ – 70mmhg	(35-45 mmhg)
⚠️ HCO ₃ – 23mmol/L	(22-26mmol/L)
⚠️ Na – 100mmol/L	(135 - 145 (mmol/L).
⚠️ K- 3.7mmol/ L	(3.5-4.5mmol/L)
⚠️ Cl – 67mmol/L	(98-106 mmol/L)
⚠️ Ionised calcium – 1.00mmol/L	(1.05-1.3 mmol/L)
⚠️ Lactate – 2.5mmol/L	(< 2 mmol/L)
⚠️ HB 129g/L	(120-160g/L)
⚠️ Glucose – 10	(3.9 to 5.5 mmol/L)
⚠️ PH – 7.23	(7.35-7.45)

ANSWERS

What are the 4 abnormalities seen and provide an interpretation of your findings in the context of this patient's presentation. (4+2 marks)Key:

- 1. Critical life-threatening hyponatremia Na – 100**
- 2. Mixed normal anion gap metabolic and respiratory acidosis with Type 2 respiratory failure.**
3. Expected $\text{PaCO}_2 = (1.5 \times \text{HCO}_3) + 8 \pm 2 = (1.5 \times 23) + 8 \pm 2 = 42.5 \pm 2$
4. Expected HCO_3 - Chronic COPD - HCO_3 incr 4 from 24 per 10 change in CO_2 from 40
 $\text{pH} = 36$
5. Mild Lactic acidosis – (0.5 marks only maximum)
6. Anion gap $\text{AG} = \text{Na} - \text{Cl} - \text{HCO}_3 = 100 - 67 - 23 = 10$
7. Can comment on hypocalcaemia– (0.5 marks only maximum)
 pH (cannot score full marks without points 1-2 for this section)



Interpretation:

Patient with **life threatening hyponatremia** with mixed respiratory and metabolic acidosis, possibly post ictal requires **emergent correction of sodium to raise Na** by 5 mmol/L. Also requires optimisation of oxygenation and elective intubation.

 **What are your 3 immediate management priorities in this patient and give details for each: - (6 marks)**

- 1. Urgent correction of sodium to raise it by 5 -6 mmol / l by using 3% saline 100ml x 2, (maximum 300ml)then correct slowly aim < 7-8 mmol inc in 24 hrs.**
- 2. Improve oxygenation – escalate to HFNP / BIPAP / CPAP with the intent to electively intubate.**
- 3. Seek and treat underlying cause of hyponatremia – eg -chest sepsis – bloods including FBE< UEC< CRP, 2 sets culture, urine MCS, urine osmolarity/ na level, POCUS- lung/ abdomen, CXR, CT brain, Rx with IV abs -ceftriaxone 2g.**
- 4. Modified RSI intubation – ketamine/ preoxygenate- HFNP/ apnoeic O2. (1 mark)**
- 5. Discussion with ICU for ongoing hyponatremia management & disposition. (1 mark)**

 **(cannot score full marks without points 1-3 for this section)**