



**QUESTION FOR DAY 4 POLLING COMPETITION**

1. All of the following conditions cause normal anion gap metabolic acidosis except

- a. Ureteroenterostomy.
- b. Administration of excess normal saline solution.
- c. Renal tubular acidosis
- d. Acute kidney injury

Answer D (20 sec)

2. 3 year old child 2 days after admission for new onset type 1 diabetes mellitus, diabetic ketoacidosis, and clinically suspected cerebral edema treated with 0.9 % normal saline, appropriate dextrose IV fluids, insulin infusion, and is being transitioned to subcutaneous insulin but is found to have a persistent metabolic acidosis, despite improvement in consciousness and overall clinical status, normalization blood glucose for approximately 12 hours. What is the most likely cause of the metabolic acidosis?

- a.  $\beta$ -hydroxybutyrate
- b. Hyperkalemia
- c. Hyperchloremia
- d. Lactic acid

Answer C. Hyperchloremia (30 sec)

3. Apparent strong ion difference (Steward approach) is typically calculated as follows:  $SID = [(Na+K+Ca^{2+}) + (Mg^{2+}) - (Cl^{-})]$

For critically ill patients, which of the following should also be included in the strong anion group if elevated?

- a. Albumin
- b. Bicarbonate
- c. Lactate
- d. Phosphate

Answer C (20 sec)

4. During normal lactate production derived from skeletal muscle, gut, brain, and circulating erythrocytes (~1 mmol/kg/hour), which of the following immediately involves lactate in gluconeogenesis?

- a. Catabolism to urea
- b. Cori cycle
- c. Oxidation to acetyl-CoA
- d. Oxidation to pyruvate

Answer B. (20 sec)

5. Which of the following Blood gas reports reveal a mixed acid base problem?

- a. pH: 7.16, pCO<sub>2</sub>: 28, HCO<sub>3</sub>: 14
- b. pH: 7.20, pCO<sub>2</sub>: 35, HCO<sub>3</sub>: 19
- c. pH: 7.10, pCO<sub>2</sub>: 24, HCO<sub>3</sub>: 12
- d. pH: 7.25, pCO<sub>2</sub>: 40, HCO<sub>3</sub>: 25

Ans : d (30 sec)

6. Increased anion gap usually is seen in all of the following situations **EXCEPT**

- a. Acute watery diarrhoea with severe dehydration in shock
- b. Infant with septic shock
- c. Ethylene glycol poisoning
- d. Glue sniffing (toluene)

Ans: d (20 sec)

7. Which of the statement is correct regarding bicarbonate reabsorption

- a) 90% absorbed in proximal tubule and 10% absorbed in distal tubule
- b) 10% absorbed in loop of henle and 90% absorbed in distal tubule
- c) 90% absorbed in proximal tubule and 10% absorbed in distal tubule
- d) 90% absorbed in proximal tubule and 10% absorbed in collecting duct

Ans: c (30 sec)

8. Elevation in the plasma bicarbonate can occur due to following mechanism

- a) Excessive hydrogen loss
- b) functional addition of new bicarbonate
- c) volume contraction (“contraction alkalosis”)
- d) All the above

Ans: d (30 sec)

9. All are true about metabolic alkalosis except

- a) Associated with hypokalemia
- b) Associated with decreased serum total calcium concentration
- c) Can be caused due to Primary hyperaldosteronism
- d) Can be caused due to Renin secreting tumor

Ans: b (30 sec)

10. In metabolic alkalosis secondary to gastric loss, all the following mechanisms prevent renal bicarbonate loss **EXCEPT**

- A. mineralocorticoid escape phenomenon
- B. reduce GFR
- C. sodium and bicarbonate resorption
- D. increase aldosterone level

Ans: a (30 sec)