

Acid-Base Balance and Imbalances

1. A client with COPD is admitted to the hospital with an exacerbation of the disease. ABG results are pH 7.30, PaCO₂ 51, and HCO₃⁻ 25. How would the nurse interpret these?

 - A. Respiratory acidosis, uncompensated
 - B. Respiratory alkalosis partially compensated
 - C. Respiratory acidosis, compensated
 - D. Metabolic acidosis, compensated
2. A client admitted to the Emergency Department with chest injuries following a motor vehicle accident complains that it hurts to breathe. The client's respiratory rate is 12 and very shallow. The nurse would anticipate which of the following results on ABGs?

 - A. pH 7.42, PaCO₂ 41 mmHg, HCO₃⁻ 23 mEq/L, SaO₂ 96%
 - B. pH 7.31, PaCO₂ 49 mmHg, HCO₃⁻ 24 mEq/L, SaO₂ 87%
 - C. pH 7.49, PaCO₂ 34 mmHg, HCO₃⁻ 30 mEq/L, SaO₂ 89%
 - D. pH 7.38, PaCO₂ 38 mmHg, HCO₃⁻ 22 mEq/L, SaO₂ 90%
3. What action can the nurse take initially when a client becomes anxious and starts to hyperventilate?

 - A. Tell the client to stop breathing so fast because he may pass out.
 - B. Give the client a sedative to decrease anxiety and stop hyperventilation.
 - C. Give the client a paper bag to breathe into.
 - D. Notify the physician.
4. The nurse would closely monitor a client with diabetic ketoacidosis (DKA) for which of the following acid-base imbalances?

 - A. Metabolic acidosis
 - B. Metabolic alkalosis
 - C. Respiratory acidosis
 - D. Respiratory alkalosis
5. A 36-year-old female is admitted with vomiting and dehydration due to having the flu for 3 days. ABGs are pH 7.46, PaCO₂ 50, HCO₃⁻ 33, SaO₂ 95%. What do these values indicate to the nurse?

 - A. Metabolic acidosis, uncompensated
 - B. Respiratory acidosis, compensated
 - C. Metabolic alkalosis, partially compensated
 - D. Metabolic alkalosis, uncompensated

6. A client in a full cardiac arrest is admitted to the Emergency Department. ABGs indicate a respiratory acidosis. How does the nurse respond to correct this condition?
- A. Administer NaHCO_3 to correct the acidosis.
 - B. Administer epinephrine to get a heart rate so the acidosis can be corrected.
 - C. Ventilate client to "blow off" excess CO_2 .
 - D. Start cardiac compressions.
7. Which of the following responses by the nurse is correct when trying to explain to a client why vomiting caused the development of a metabolic alkalosis?
- A. "Vomiting causes you to lose a large amount of the base in your system, and this in turn leads to alkalosis."
 - B. "When vomiting occurs, a large amount of HCO_3 can be lost, and this leads to metabolic alkalosis."
 - C. "Vomiting causes a loss of HCl from the stomach, and a metabolic acidosis results from the loss of the acids in the GI fluids."
 - D. "Vomiting can cause a loss of gastric acids from the stomach, and metabolic alkalosis develops from this loss."
8. A 68-year-old client is admitted with pneumonia. ABG results are pH 7.46, PaCO_2 30, HCO_3 -19, SaO_2 72. The nurse interprets this as:
- A. Respiratory acidosis, uncompensated
 - B. Respiratory alkalosis, partially compensated
 - C. Respiratory alkalosis, uncompensated
 - D. Metabolic alkalosis, partially compensated
9. A 71-year-old client develops hypertension, tachycardia, and increased respirations two days after surgery. ABG results are pH 7.29, PaCO_2 52, HCO_3 -24, SaO_2 95%.
- A. Respiratory acidosis, uncompensated
 - B. Respiratory alkalosis, partially compensated
 - C. Respiratory alkalosis, uncompensated
 - D. Metabolic alkalosis, partially compensated
10. A 57-year-old client is admitted with a diagnosis of acute myocardial infarction. ABG results are pH 7.36, PaCO_2 29, HCO_3 -20, SaO_2 100%.
- A. Well oxygenated with uncompensated respiratory alkalosis.
 - B. Hypoxemic with compensated respiratory acidosis.
 - C. Well oxygenated with metabolic acidosis.
 - D. Hypoxemic with compensated metabolic acidosis.