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 anticipated which of the following results on ABGs?

A. pH 7.42, PaCO₂ 41 mmHg, HCO₃⁻23 mEq/L, Sa02 96%
B. pH 7.31, PaCO₂ 49 mmHg, HCO₃⁻24 mEq/L, Sa02 87%
C. pH 7.49, PaCO₂ 34 mmHg, HCO₃⁻30 mEq/L, Sa02 89%
D. pH 7.38, PaCO₂ 38 mmHg, HCO₃⁻22 mEq/L, Sa02 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. ABG results are pH 7.46, PaCO₂ 50, HCO₃⁻33, SaO₂ 95%. What do these value 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\textsubscript{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\textsubscript{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\textsubscript{3} can be lost, and this leads to metabolic alkalosis."
C. "Vomiting causes a loss of HCI 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\textsubscript{2} 30, HCO\textsubscript{3} -19, SaO\textsubscript{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\textsubscript{2} 52, HCO\textsubscript{3} -24, SaO\textsubscript{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\textsubscript{2} 29, HCO\textsubscript{3} -20, SaO\textsubscript{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.