Arterial Blood Gas

REFERENCE

NORMAL VALUES & ROME

- pH 7.35–7.45 · PaCO2 35–45 · HCO3 22–26
- RO: Respiratory Opposite — pH and CO2 move in opposite directions
- ME: Metabolic Equal — pH and HCO3 move in the same direction

RESPIRATORY ACIDOSIS & ALKALOSIS

- Respiratory acidosis causes: respiratory depression, sleep apnea, COPD, asthma, alcohol intoxication, CNS depressants
- Its signs: decreased BP and RR, increased HR, restlessness, confusion, headache, sleepy/coma
- Respiratory alkalosis causes: hyperventilation, panic, anxiety, pain
- Its signs: RR over 20, increased HR, tetany, EKG changes, Chvostek sign

METABOLIC ACIDOSIS

- Causes: diarrhea, NG tube suctioning, renal failure, diabetic ketoacidosis
- Signs: Kussmaul breathing, hyperkalemia, muscle twitching, weakness, arrhythmias, confusion

METABOLIC ALKALOSIS

- Causes: vomiting, diuresis, antacids
- Signs: hypoventilation, low potassium, dysrhythmia, muscle cramps/weakness, tetany, tremors, EKG changes

Take Home Message:

Read an ABG with ROME: respiratory is opposite, metabolic is equal — pH 7.35–7.45, CO2 35–45, HCO3 22–26.