



SNS COLLEGE OF ALLIED HEALTH SCIENCES
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**DEPARTMENT : CARDIO PULMONARY PERFUSION CARE
TECHNOLOGY**

COURSE NAME : PHARMACOLOGY

UNIT : ALKALOSIS

**TOPICS : DEFINITION, CAUSE, CLINICAL MANIFESTATIONS,
DIAGNOSIS, MANAGEMENT**



ACIDOSIS



- Metabolic alkalosis is a medical condition characterized by an elevated pH of the blood and an excess of bicarbonate ions.
- Alkalosis can be caused by various factors, including medications, and understanding the pharmacological aspects is important for healthcare professionals managing patients with this condition.



CAUSES



Diuretics:

Loop and thiazide diuretics can lead to metabolic alkalosis by promoting the loss of chloride and sodium, which can result in an increased reabsorption of bicarbonate in the kidneys.

Antacids:

Some antacids, particularly those containing bicarbonate, can contribute to metabolic alkalosis by providing an exogenous source of bicarbonate.



Steroids:

Excessive use of corticosteroids can lead to alkalosis by promoting the excretion of hydrogen ions and increasing bicarbonate reabsorption.

Mineralocorticoids:

Excessive production or administration of mineralocorticoids, such as aldosterone, can increase renal retention of sodium and bicarbonate, leading to alkalosis.



Certain Antihypertensive Medications:

Potassium-sparing diuretics and angiotensin-converting enzyme (ACE) inhibitors may contribute to alkalosis, particularly in the presence of other factors.



CLINICAL MANIFESTATIONS



- Hypokalemia (low potassium levels)
- Muscle twitching or cramps
- Hand tremors
- Nausea and vomiting
- Confusion or irritability
- Respiratory symptoms in severe cases



DIAGNOSIS



- Diagnosis involves blood tests to measure pH, bicarbonate levels, and electrolytes.



MANAGEMENT



Treatment of Underlying Cause:

- Discontinuation or adjustment of medications contributing to alkalosis.

Electrolyte Replacement:

- If alkalosis is associated with hypokalemia, potassium replacement may be necessary.



Volume Expansion:

- Intravenous saline administration may be used to expand blood volume and correct alkalosis

Acetazolamide:

- In certain cases, acetazolamide, a carbonic anhydrase inhibitor, may be prescribed to enhance renal excretion of bicarbonate.



TECHNICIAN ROLE



- Regular monitoring of blood pH, bicarbonate levels, and electrolytes is essential during the management of metabolic alkalosis.



ASSESSMENT



- What is Alkalosis ?
- What all are the Causes of Alkalosis ?