SNS COLLEGE OF ALLIED HEALTH SCIENCES

SNS Kalvi Nagar, Coimbatore - 35

Affiliated to Dr MGR Medical University, Chennai

DEPARTMENT : CARDIO PULMONARY PERFUSION CARE TECHNOLOGY

COURSE NAME : PHARMACOLOGY

UNIT : ACIDOSIS

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

ACIDOSIS

- Metabolic acidosis is a medical condition characterized by an imbalance in the body's acid-base equilibrium, leading to a decreased pH of the blood.

- It can occur due to various underlying causes, and medications may contribute to or exacerbate metabolic acidosis.

CAUSES

Medications:

Acetazolamide: A carbonic anhydrase inhibitor used in conditions like glaucoma and altitude sickness. It can lead to metabolic acidosis by causing bicarbonate loss in the kidneys.

Methanol and Ethylene Glycol: Toxic alcohols that, when ingested, can be metabolized to acidic byproducts, contributing to acidosis.

Salicylates (Aspirin): In high doses, aspirin can cause metabolic acidosis by increasing the production of lactic acid.

Topiramate: An antiepileptic drug that can cause metabolic acidosis, possibly by inhibiting carbonic anhydrase.

Large doses of Penicillin: Some penicillins can form organic acids, contributing to acidosis.

Renal Dysfunction:

Kidney diseases or impairment in renal function can lead to impaired excretion of acid, contributing to metabolic acidosis.

Lactic Acidosis:

Certain medications, like nucleoside reverse transcriptase inhibitors (NRTIs) used in HIV treatment, can cause lactic acidosis.

CLINICAL MANIFESTATIONS

- Rapid breathing (Kussmaul respirations)
- Fatigue
- Confusion
- Headache
- Nausea and vomiting

DIAGNOSIS

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

MANAGEMENT

Treatment of Underlying Cause:

- Discontinuation or adjustment of medications contributing to acidosis.
- Management of conditions causing renal dysfunction or impaired acid excretion.

Sodium Bicarbonate: Administration of sodium bicarbonate may be necessary to correct the acid-base imbalance.

Fluid Resuscitation:

- Intravenous fluids may be administered to restore hydration and correct acidosis.

Ventilation Support:

- In severe cases, respiratory support may be required to improve ventilation and eliminate excess carbon dioxide.

TECHNICIAN ROLE

- Regular monitoring of blood pH, bicarbonate levels, and clinical symptoms is essential during the management of metabolic acidosis.

ASSESSMENT

- What is Acidosis ?
- What is the Management of Acidosis ?