Fluids & Electrolytes

NAPNES Guidelines

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Types of Solutions

- Crystalloids
- Colloids
- Blood products
- Electrolytes

Crystalloids

- Mechanism of Action
  - Supply sodium and water
    - Maintain osmotic gradient
      - Between fluid outside blood vessels and fluid inside blood vessels
    - Expands plasma volume
- Therapeutic uses
  - Maintenance fluids
  - Replacement fluids
  - Promote urinary flow

Crystalloids

- Examples
  - NS (0.9% sodium chloride)
    - Most commonly used
  - Hypertonic saline
  - Lactated Ringer's
  - D5W
  - Plasma-Lyte

Colloids

- Mechanism of Action
  - Fluid is pulled from extravascular space to the intravascular space
    - Thus increasing blood volume
  - “Plasma expanders”

Colloids

- Therapeutic uses
  - Severe conditions
    - Acute liver failure,
    - Acute nephrosis
    - Adult respiratory distress syndrome
    - Burns
    - Cardiopulmonary bypass
    - Hypoproteinemia
    - DVT reduction
    - Renal dialysis
    - Shock

Colloids

- Examples
  - Dextran 70
  - Dextran 40
  - Hetastarch
  - 5% albumin
  - 25% albumin

Blood Products

- Mechanism of Action
  - Increase plasma volume
    - Same manner as colloids and crystalloids
      - Pulling fluid from extravascular to intravascular space
  - Red blood cells (RBC)
    - Ability to carry oxygen
- Therapeutic uses
  - Refer to table 26-8

Blood Products

- Examples
  - Cryoprecipitate and PPF
  - Fresh frozen plasma (FFP)
  - Packed red blood cells (PRBCs)
  - Whole blood

Electrolytes

- Potassium
  - Most abundant cationic electrolyte inside cells
- Sodium
  - Counterpart to potassium
  - Principal cation outside cells
- Therapeutic uses
  - Treatment or prevention of depletion

Nursing process

- Assessment
- Nursing diagnosis
- Planning
- Implementation
- Evaluation