DISEASE

HYPOKALEMIA

PATHOPHYSIOLOGY

- The result of an increased loss of potassium from the body or movement of potassium into the cells, resulting in a blood potassium less than 3.5 mEq/L

RISK FACTORS

Actual K+ Deficits
- Overuse of loop diuretics, digoxin, and steroids
- Increased secretion of aldosterone
- Cushing's syndrome
- Loss via GI tract: N/V, diarrhea, prolonged NG suctioning, tap water enemas
- NPO status
- Kidney disease

Relative K+ Deficits
- Alkalosis
- Hyperinsulinism
- Hyperalimentation
- TPN
- Water intoxication

CLINICAL MANIFESTATIONS

- Vitals: decreased BP, thready weak pulse, orthostatic hypotension, weak peripheral pulses
- Neurologic: altered mental status, anxiety, and lethargy that progresses to acute confusion and coma
- ECG: flattened T-wave, prominent U-wave, ST depression, prolonged PR interval
- GI: hypoactive bowel sounds, N&V, constipation, abdominal distention, paralytic ileus can develop, decrease motility
- Muscular: weakness, diminished DTRs, leg cramps, paresthesias
- Respiratory: shallow and ineffective breathing that result from profound weakness of the skeletal muscles of respiration, diminished breath sounds

DIAGNOSTICS

LABORATORY TESTS
- Blood (serum) potassium: decreased to less than 3.5 mEq/L

DIAGNOSTIC PROCEDURES
- Electrocardiogram (ECG): inverted/flat T waves, ST depression, elevated U wave

MEDICATIONS

Oral Replacement of Potassium
- Provide oral potassium medications

IV Potassium Supplementation
- Never administer by IV bonus (high risk of cardiac arrest)
- The maximum recommended rate is 10 mEq of potassium per 10 mL of solution
- Assess for phlebitis

NURSING INTERVENTIONS & PATIENT TEACHING

NURSING CARE
- Administer prescribed potassium replacement. Never give potassium via IM or SQ routes, which can cause necrosis of the tissues
- Monitor and maintain adequate urine output
- Observe for shallow ineffective respirations and diminished breath sounds
- Monitor cardiac rhythm, and intervene promptly as needed
- Monitor patients receiving digoxin. Hypokalemia increases the risk for digoxin toxicity
- Monitor LOC and maintain client safety
- Monitor bowel sounds and abdominal distention, and intervene as needed
- Monitor oxygen saturation levels, which should remain greater than 95%
- Assess hand grasps for muscle weakness
- Assess DTRs
- Implement fall precautions due to muscle weakness
- Encourage foods high in potassium (bananas, avocados, broccoli, melons, citrus fruits, dairy products)

PATIENT EDUCATION
- Understand which potassium-rich foods to consume
- Prevent a decrease in potassium by avoiding excessive use of diuretics and laxatives

POSSIBLE COMPLICATIONS

RESPIRATORY FAILURE
- Nursing actions:
  - Maintain an open airway, and monitor vitals
  - Monitor LOC
  - Monitor for hypoxemia and hypercapnia
  - Assist with intubation and mechanical ventilation if indicated

CARDIAC ARREST
- Nursing actions:
  - Perform continuous cardiac monitoring
  - Treat dysrhythmias promptly