DISEASE

HYPERKALEMIA

PATHOPHYSIOLOGY

- The result of an increased intake of potassium, movement of potassium out of the cells, inadequate kidney excretion, or drugs that decreased K+ excretion resulting in a blood potassium level grater than 5.0 mEq/L

RISK FACTORS

Actual K+ Excess
- Overconsumption of high-potassium foods or salt substitutes
- Excessive or rapid potassium replacement (oral or IV)
- RBC transfusions
- Adrenal insufficiency
- ACE inhibitors
- K+ sparing diuretics
- Kidney failure

Relative Potassium Excess
- Extracellular shift caused from decreased insulin production
- Acidosis (DKA)
- Tissue damage (sepsis, trauma, surgery, fever, myocardial infarction)
- Hyperuricemia

CLINICAL MANIFESTATIONS

- Vitals: slow irregular pulse, hypotension
- Neuromusculoskeletal: restlessness, irritability, weakness to the point of ascending flaccid paralysis, paresthesias
- ECG: premature ventricular contractions, ventricular fibrillation, peaked T-waves, widened QRS interval
- GI: increased motility, diarrhea, hyperactive bowel sounds
- Other manifestations: oliguria

DIAGNOSTICS

LABORATORY TESTS
- Blood (serum) potassium: increased or greater than 5.0 mEq/L
- Hemoglobin & Hematocrit: increased with dehydration and decreased with kidney failure
- BUN & Creatinine: increased with kidney failure
- ABG: metabolic acidosis with kidney failure

DIAGNOSTIC PROCEDURES
- Electrocardiogram: peaked T waves, widened PR and QRS intervals, absent or flat P waves, ST depression, and possible dysrhythmias (heart block, ventricular fibrillation, asystole)

MEDICATIONS

LOOP DIURETICS (Furosemide)
- Administer if kidney function is adequate
- Loop diuretics increase the depletion of potassium from the renal system
- Nursing actions: Monitor I&O

CATION EXCHANGE RESINS
- Sodium polystyrene sulfonate works in the intestine and excretes excess potassium from the body through the feces
- Nursing actions: If potassium levels are extremely high, dialysis can be required
- Patient education:
  - Adhere to a potassium-restricted diet
  - Hold oral potassium supplements until advised by the provider

BETA-2 AGONISTS (Albuterol)
- Nursing actions: Monitor for tachycardia and chest pain

PATIROMER
- Used for chronic hyperkalemia

NURSING INTERVENTIONS & PATIENT TEACHING

NURSING CARE
- Priority nursing care is to prevent falls, assessing for cardiac complications, and health teaching
- Monitor cardiac rhythms and intervene promptly as needed
- Monitor I&O
- Assess for muscle weakness
- Observe for GI manifestation, such as nausea and intestinal colic
- For patient with elevated potassium levels, report and stop IV infusion of K+, maintain iV access, stop all potassium supplements, and promote a K+ restricted diet
- Monitor for manifestations of hypokalemia, while receiving medications to reduce the potassium level
- Severe hyperkalemia can require administration of calcium gluconate. Chronic or severe hyperkalemia can require dialysis
- Administer IV fluids with dextrose and regular insulin
- Administer sodium bicarbonate to reverse acidosis

PATIENT EDUCATION
- Remember which potassium restricted foods to consume (
- Prevent an increase in potassium by reading food labels and avoiding salt substitutes containing potassium

POSSIBLE COMPLICATIONS

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