DISEASE

HYPOVOLEMIA (Isotonic dehydration)

PATHOPHYSIOLOGY

- Loss of ECF volume
- Exceeds the intake of fluid
- Lack of both water and electrolytes, causing a decrease in circulating blood volume
- FLUID VOLUME DEFICIT

RISK FACTORS

Any loss of fluid!

- Excessive GI loss: vomiting, diarrhea, NG suctioning
- Excessive skin loss: diaphoresis without sodium and water replacement
- Excessive renal system losses: diuretic therapy, kidney disease, adrenal insufficiency
- Third spacing: burns
- Hemorrhage or plasma loss
- Altered intake: anorexia, nausea, NPO order, impaired swallowing, confusion (decreased intake of water and sodium)

CLINICAL MANIFESTATIONS

- Vitals: hypothermia, tachycardia (to maintain BP), thready pulse, hypotension, orthostatic hypotension, decreased CVP, tachypnea (increased respirations to compensate for lack of fluid volume within the body), hypoxia
- Neuromusculoskeletal: dizziness, syncope, confusion, weakness, fatigue
- GI: thirst, dry furrowed tongue, N+V, anorexia, acute weight loss
- Renal: oliguria (decreased production and concentration of urine)
- Diminished cap refill, cool clammy skin, diaphoresis, sunken eyeballs, flattened neck veins, poor skin turgor and tenting, weight loss, low CVP
- Older adults have loss of skin elasticity, decrease in glomerular filtration and concentrating ability of the kidney, loss of muscle mass, and diminished thirst reflex

DIAGNOSTICS

Laboratory tests:

- CMP, CBC, BMP, urine sample
- Hematocrit (Hct): increased
- BUN: increased (greater than 25 mg/dL) due to hemoconcentration
- Urine specific gravity: greater than 1.030
- Blood sodium: greater than 145 mEq/L with dehydration
- Blood osmolality: greater than 295 mOsm/kg with dehydration/hypernatremia

MEDICATIONS

If patient is suffering from hypovolemic shock:

- Administer vasoconstrictors (dopamine, norepinephrine, phenylephrine)
- Agents to improve myocardial perfusion (sodium nitroprusside)

and/or

- Positive inotropic medications (dobutamine, milrinone)

NURSING INTERVENTIONS & PATIENT TEACHING

NURSING CARE

- Provide oral and IV therapy
- Monitor I+O
- Monitor vital subs (orthostatic BP, heart rate)
- Monitor for changes in mentation and confusion (an indication of worsening fluid imbalance)
- Monitor weight every 8 hours while fluid replacement is in progress
- Assess level of gait stability. Encourage the patient to use call light and ask for assistance because of the increased risk for falls
- Encourage the patient to change positions, rolling from side to side or standing up slowly
- Collaborate with other members of the health care ten to determine appropriate fluid volume replacement be oxygen management.
- FALL PRECAUTIONS

PATIENT EDUCATION

- Drink plenty of liquids to promote hydration
- Causes of dehydration include vomiting; large, draining wounds; and diarrhea or excessive ostomy losses

POSSIBLE COMPLICATIONS

Hypovolemic Shock

- Occurs with significant loss of body fluid
- Patient's MAP (mean arterial pressure) decreases (which slows blood flow and perfusion to tissues of the body) and the cells are no longer able to carry oxygen to the blood adequately
- Nursing actions:
    - Administer O2 and monitor O2 sat (less than 70% is a medical emergency)
    - Stay with an unstable patient
    - Monitor vitals at least every 15 mins
    - Perform hemodynamic monitoring
    - Administer fluid replacement with the following:
        - Colloids—whole blood, packed RBCs, plasma, synthetic plasma extenders
        - Crystalloids—lactated Ringer's, normal saline