

# DISEASE

## SIADH

(Syndrome of Inappropriate Antidiuretic Hormone)

## PATHOPHYSIOLOGY

- Condition of hyperfunctioning of the posterior pituitary gland in which excess ADH is released, but not in response to the body's need for it
- Excess ADH leads to renal reabsorption of water and suppression of renin-angiotensin mechanism, causing renal excretion of sodium leading to water intoxication, cellular edema, and dilutional hyponatremia
- Water is retained, resulting in hyponatremia and hypervolemia

## RISK FACTORS

Conditions that stimulate the hypothalamus to hypersecrete ADH include:

- Malignant tumors
- Increased intrathoracic pressure (positive pressure ventilation)
- Head injury
- Meningitis
- Stroke
- Tuberculosis
- Medications (chemotherapy agents, TCAs, SSRIs, opioids, Fluoroquinolone antibiotics)

## CLINICAL MANIFESTATIONS

- Early manifestations include headache, weakness, anorexia, muscle cramps, and weight gain (without edema because water, not sodium, is retained)
- As the blood sodium level decreases, the client experiences personality changes, hostility, sluggish DTRs, N/V/D, oliguria with dark yellow concentrated appearance
- Confusion, lethargy, and Cheyne-Stokes respirations herald impending crisis.
- When the blood sodium level drops further, seizures, coma, and death can occur
- Manifestations of fluid volume excess include tachycardia, bounding pulses, possible hypertension, crackles in lungs, distended neck veins, taut skin, and weight gain without edema.
- Intake > output

## DIAGNOSTICS

### LABORATORY TESTS

- Urine testing: think CONCENTRATED
  - Increased urine sodium
  - Increased urine osmolality
  - As urine volume decreases, urine osmolality increases
- Blood testing: think DILUTE
  - Decreased blood sodium (dilutional hyponatremia)
  - Decreased blood osmolality (less than 270 mEq/L)
  - As blood volume increases, blood osmolality decreases

## MEDICATIONS

### TETRACYCLINE DERIVATIVE (DEMECLOXYCLINE)

- Unlabeled use to correct fluid and electrolyte imbalances in mild SIADH by stimulating urine flow
- Contraindicated in clients who have impaired kidney function
- Nursing actions:
  - Monitor for effectiveness (increased blood sodium/osmolality and decreased urine sodium osmolality)
- Client education:
  - Monitor for signs of a yeast infection (a white, cheese-like film inside the mouth)
  - Avoid prolonged exposure to sunlight

### LOOP DIURETICS (FUROSEMIDE)

- Used to increase water excretion from the kidneys
- Nursing actions:
  - Use with caution because can cause sodium excretion and can worsen hyponatremia
  - Change positions slowly in case of postural hypotension

### HYPERTONIC NaCl IV FLUID

- Goal is to elevate the sodium level enough to alleviate neurologic compromise
- Nursing actions:
  - Monitor for fluid overload and heart failure (distended neck veins, crackles in lungs)

## NURSING INTERVENTIONS

## & PATIENT TEACHING

### NURSING CARE

- Restrict oral fluids to 500 to 1000 mL/day to prevent further hemodilution (first priority). During fluid restriction, provide comfort measures for thirst (mouth care, ice chips, lozenges, staggered water intake)
- Use 0.9% NaCl, instead of water, to flush enteral routes, and to mix medications or dilute feedings administered enterally
- Monitor I&O. Report decreased urine output
- Monitor vitals for increased BP, tachycardia, and hypothermia
- Auscultation lung sounds to monitor for pulmonary edema (can develop rapidly and is a medical emergency)
- Monitor for decreased blood sodium/osmolality and elevated urine sodium/osmolality
- Weigh the client daily
- Report altered mental status (headache, confusion, lethargy, seizures, coma). Neurologic assessment every 4 hours
- Reduce environmental stimuli and position the client as needed
- Provide a safe environment for clients who have altered levels of consciousness. Maintain seizure precautions
- Monitor for indications of heart failure, which can occur from fluid overload. Use of a loop diuretic can be indicated
- Teach the patient to know the signs and symptoms of FVD and FVE, dietary and lifestyle modifications, and when to notify the provider

## POSSIBLE COMPLICATIONS

### WATER INTOXICATION, CEREBRAL/PULMONARY EDEMA, AND SEVERE HYPONATREMIA

- Without prompt treatment, SIADH can lead to these complications, which can result in coma or death
- Nursing actions:
  - Monitor for early manifestations of water intoxication (lung crackles, distended neck veins, changes in neurologic state [confusion, headaches, twitching, disorientation], edema, and decreased urinary output)
  - Maintain seizure precautions
  - Monitor blood sodium level
- Client education:
  - Follow fluid restrictions to prevent worsening of the condition

