

- Deficient Fluid Volume related to increased diuresis during diuretic drug therapy
- Imbalanced Nutrition: Less Than Body Requirements related to excessive loss of potassium with thiazide and loop diuretics
- Risk for Injury: Hypotension and dizziness as adverse drug effects
- Deficient Knowledge related to the need for and correct use of diuretics
- Sexual Dysfunction related to adverse drug effects

Planning/Goals

The client will:

- Take or receive diuretic drugs as prescribed
- Experience reduced edema and improved control of blood pressure
- Reduce dietary intake of sodium and increase dietary intake of potassium
- Avoid preventable adverse drug effects
- Keep appointments for follow-up monitoring of blood pressure, edema, and serum electrolytes

Interventions

Promote measures to prevent or minimize conditions for which diuretic drugs are used.

- With edema, helpful measures include the following:
 - Decreasing dietary sodium intake
 - Losing weight, if obese
 - Elevating legs when sitting
 - Avoiding prolonged standing or sitting
 - Wearing support hose or elastic stockings
 - Treating the condition causing edema
- With heart failure and in older adults, administer IV fluids or blood transfusions carefully to avoid fluid overload and pulmonary edema. Fluid overload may occur with rapid administration or excessive amounts of IV fluids.
- With hypertension, helpful measures include decreasing dietary sodium intake, exercising regularly, and losing weight, if obese.
- With edematous clients, interventions to monitor fluid losses include weighing under standardized conditions, measuring urine output, and measuring edematous sites such as the ankles or the abdomen. Once the client reaches “dry weight,” these measurements stabilize and can be done less often.
- With clients who are taking digoxin, a potassium-losing diuretic, and a potassium supplement, assist them to understand that the drugs act together to increase therapeutic effectiveness and avoid adverse effects (eg, hypokalemia and digoxin toxicity). Thus, stopping or changing dosage of one of these drugs can lead to serious illness.

Evaluation

- Observe for reduced edema and body weight.
- Observe for reduced blood pressure.

- Observe for increased urine output.
- Monitor serum electrolytes for normal values.
- Interview regarding compliance with instructions for diet and drug therapy.
- Monitor compliance with follow-up appointments in outpatients.

PRINCIPLES OF THERAPY

Drug Selection

The choice of diuretic drug depends primarily on the client's condition.

1. **Thiazides and related diuretics** are the drugs of choice for most clients who require diuretic therapy, especially for long-term management of heart failure and hypertension. All the drugs in this group have similar effects. For most clients, hydrochlorothiazide is effective.
2. A **loop diuretic** (eg, furosemide) is preferred when rapid diuretic effects are required or when renal impairment is present.
3. A **potassium-sparing diuretic** may be given concurrently with a potassium-losing diuretic to prevent or manage hypokalemia and to augment the diuretic effect. The two drugs can be given separately or in a fixed-dose combination product (see Drugs at a Glance: Combination Diuretic Products).
4. Two **potassium-losing diuretics** are sometimes given concurrently when an inadequate diuretic response occurs with one of the drugs. The combination of a loop and a thiazide diuretic has synergistic effects because the drugs act in different segments of the renal tubule. The synergistic effects probably result from the increased delivery of sodium to the distal tubule (where thiazides act) as a loop diuretic blocks sodium reabsorption in the loop of Henle. A commonly used combination is furosemide and hydrochlorothiazide (chlorothiazide can be given IV in clients who are unable to take an oral drug). Furosemide and metolazone have also been used. Because a thiazide–loop diuretic combination can induce profound diuresis, with severe sodium, potassium, and volume depletion, its use should be reserved for hospitalized clients who can be closely monitored. If used for ambulatory clients, the thiazide diuretic should be given in very low doses or only occasionally, to avoid serious adverse events.

Dosage Factors

Dosage of diuretics depends largely on the client's condition and response and should be individualized to administer the minimal effective amount.