

Hydrochlorothiazide HCTZ

Hydrochlorothiazide is the most commonly used thiazide diuretic due to its function in treating high blood pressure and fluid retention. This drug can be used to treat essential hypertension, edema, and diabetes insipidus. It is also commonly used as a first line treatment for hypertension in the African American population.



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Mechanism of Action

Inhibits Reabsorption NaCl and H₂O

[Inhibiting-chains pulling Salt-shaker and Water-bottle from Sponge](#)

Hydrochlorothiazide promotes urine production by blocking the reabsorption of NaCl in the early segment of the distal convoluted tubule. Since “water follows salt”, water reabsorption is also inhibited.

Indications

Edema

[Edamame](#)

Thiazides can be used in moderate heart failure patients to decrease excess fluid in the system. The patient needs to have proper renal function for the medication to work.

Mild to Moderate Hypertension

[Mild to Moderate Hiker-BP](#)

Thiazides lower BP by reducing blood volume and reducing arterial resistance. Thiazides can be used alone or in combination with other hypertension medications, depending on the severity of the blood pressure. Additionally, thiazides are often first line medications for this disease in African American populations.

Side Effects

Hypokalemia

[Hippo-banana](#)

Because potassium is excreted by the kidneys through the urine, hypokalemia is an adverse effect of thiazides. Consuming potassium-rich foods or using potassium supplements can minimize this effect.

Hyponatremia

[Hippo-salt-shaker](#)

Because hydrochlorothiazide decreases the body's ability to reabsorb sodium or chloride, patients are at a risk for electrolyte imbalance. Hyponatremia and hypochloremia can occur and should be monitored closely.

Dehydration

Empty-canteen

Since hydrochlorothiazide inhibits reabsorption of NaCl and water, dehydration can be a serious side effect. Severe cases can lead to hypovolemia. Patients should weigh themselves on a regular basis to determine water loss or gain and be alert for symptoms of dry mouth, unusual thirst, and oliguria.

Hyperglycemia

Hiker-glue-bottle

Thiazide medications can elevate plasma glucose by inhibiting insulin release. Patients with diabetes or that are predisposed to getting diabetes should be monitored closely.

Gout

Gout-goat

Thiazide medications can elevate a variety of compounds in the blood. LDL, total cholesterol, triglycerides, and uric acid can all be affected. Elevated uric acid (hyperuricemia) is typically asymptomatic, but can cause gouty arthritis in patients that are predisposed to the disorder.

Contraindications

Sulfa Allergy

Sulfur-match Allergy-alligator

Some diuretics are sulfa-based, which can cause an allergic reaction in susceptible patients. If these medications are prescribed to a patient, education on risks needs to be discussed and the first dose should be given under direct medical supervision.

Pregnancy and Breastfeeding

Pregnant and Breast-feeding

This medication should not be given to women who are breastfeeding because the medication is excreted into breast milk. Additionally, hydrochlorothiazide (HCTZ) is a category B risk during pregnancy. Diuretics may reduce overall circulating volume and reduce blood flow to the placenta leading to the risk of birth defects. For this reason, diuretics like HCTZ are often avoided as first line agents.