

Brand Name: Cildoz-CT

Generic Name: Cilnidipine + Chlorthalidone

Dosage Form: Oral Tablet

Composition of Cildoz-CT:

- **Cilnidipine:** 10 mg (Calcium Channel Blocker) and
- **Chlorthalidone:** 12.5 mg (Thiazide-like Diuretic)

Mechanism of Action:

1. **Cilnidipine** in Cildoze-CT is a **dual-action calcium channel blocker**. It inhibits the influx of calcium

ions into smooth muscle cells via voltage-gated L-type calcium channels, which leads to **vasodilation** and a reduction in blood pressure. Specifically:

- **L-type calcium channels** in the vascular smooth muscle are blocked, causing arterial relaxation and reducing peripheral vascular resistance, which lowers blood pressure.
- In addition to blocking the L-type channels, cilnidipine also inhibits **N-type calcium channels** in the sympathetic nervous system. This reduces the release of norepinephrine, thereby lowering sympathetic tone and contributing to a further decrease in blood pressure.

This dual action (both vascular and sympathetic inhibition) differentiates cilnidipine from other calcium channel blockers, which only act on L-type channels and thus do not have an additional effect on the sympathetic nervous system.

2. **Chlorthalidone - Class:** Thiazide-like Diuretic

Chlorthalidone in Cildoze-CT works primarily by inhibiting the **sodium-chloride symporter** in the **distal convoluted tubule** of the nephron in the kidneys. This leads to increased excretion of **sodium** and **chloride** ions in the urine. As a result:

- Water follows the sodium, increasing urine volume and thus leading to **diuresis** (increased urine production).
- The reduction in blood volume results in decreased cardiac output and a reduction in blood pressure.
- Additionally, the loss of sodium may lead to a decrease in blood vessel constriction, helping to lower blood pressure further.

Chlorthalidone also has mild vasodilatory effects, though its primary action is through diuresis.

Pharmacology:

- **Cilnidipine:** A calcium channel blocker, which works by blocking both L-type and N-type calcium channels. It helps lower blood pressure by relaxing the blood vessels and improving blood flow.

- **Chlorthalidone:** A thiazide-like diuretic that works by reducing the reabsorption of sodium and chloride in the kidneys, leading to increased excretion of sodium and water, thus reducing blood volume and lowering blood pressure.

Indications:

This combination is primarily used in the management of **hypertension** (high blood pressure) to lower blood pressure and reduce the risk of cardiovascular events.

Dosage:

- The recommended starting dose is **1 tablet** (Cilnidipine 10 mg + Chlorthalidone 12.5 mg) once daily, usually in the morning.
- **Adjustments:** Dose adjustments may be needed based on individual patient response, blood pressure levels, and tolerance.
- Maximum daily dose: Depending on clinical response, up to 1 tablet can be taken daily.

Contraindications:

- Hypersensitivity to **Cilnidipine** or **Chlorthalidone** or any component of the formulation.
- Severe hypotension (low blood pressure).
- Severe renal impairment or anuria (lack of urine production).
- Hypokalemia (low potassium levels) or other electrolyte imbalances.
- Pregnancy and lactation (use with caution and only if necessary).

Warnings and Precautions:

- **Electrolyte Imbalances:** Monitoring of electrolytes, especially potassium and sodium, is essential during treatment with Chlorthalidone.
- **Kidney Function:** Regular monitoring of renal function is necessary, as this combination may affect kidney function.
- **Hypotension:** Caution should be taken in patients with a history of low blood pressure.
- **Liver Dysfunction:** Cilnidipine should be used with caution in patients with hepatic impairment.
- **Pregnancy and Lactation:** Not recommended during pregnancy and breastfeeding unless the benefits outweigh the risks.
- **Glucose Intolerance:** Thiazide-like diuretics may increase blood glucose levels; caution in diabetic patients.

Side Effects:

Common side effects may include:

- **Cilnidipine:** Headache, dizziness, flushing, palpitations, ankle swelling.

- **Chlorthalidone:** Electrolyte imbalances (hypokalemia, hyponatremia), dizziness, dehydration, muscle cramps, elevated blood glucose. Serious side effects could include severe allergic reactions, liver dysfunction, or kidney failure.

Drug Interactions:

- **Cilnidipine:** May interact with other antihypertensive drugs, particularly beta-blockers, ACE inhibitors, or other calcium channel blockers.
- **Chlorthalidone:** May interact with lithium, digoxin, corticosteroids, and other diuretics. Caution is needed when combined with drugs that can affect electrolyte levels or kidney function.

Monitoring:

- **Blood pressure:** Regular monitoring to assess effectiveness.
- **Electrolytes:** Monitoring potassium, sodium, and other electrolytes due to the risk of imbalances.
- **Renal Function:** Regular kidney function tests (e.g., serum creatinine, glomerular filtration rate).

Storage:

- Store at room temperature, away from moisture and heat.
- Keep the medication in its original packaging to protect it from light.

Packaging:

- Each Alu-Alu strip of Cildoz-CT contains 10 tablets.
- Each box of Cildoz-CT contains 10 strips.
- **Note:** This summary provides general prescribing information.