

Oshecad[®]-CT

Elemental Calcium 500mg + Calcitriol 0.25mcg Tablets

*The Oyster Shell Calcium with **Calcitriol***

Product Description:

Each tablet contains

- Elemental Calcium (from Oyster Shell): 500 mg
- Calcitriol: 0.25 mcg

General Information:

Patients with chronic kidney disease-mineral bone disorder (CKD-MBD) have altered mineral metabolism due to disruptions in homeostasis of serum calcium, phosphate, and the mineral-regulating hormones, parathyroid hormone (PTH), 1,25-dihydroxy vitamin D (1,25(OH)₂D), and fibroblast growth factor-23 (FGF-23).

Progressive hypocalcaemia and hyperphosphatemia as kidney function decreased the original biochemical hallmarks of mineral bone disorder. Calcium and phosphorus absorption studies showed that intestinal calcium and phosphorus absorption was low in CKD and reversible with vitamin D analogue.

Hypocalcaemia from calcium malabsorption and hyperphosphatemia from phosphorus retention, were considered to be responsible for the progression of secondary hyperparathyroidism, a common feature of CKD.

Calcium is the most abundant mineral in the body. Around 99% of total body calcium is stored in the bones and teeth, where it is essential for growth and maintenance. Around 1% is found in the blood, muscle, and cell fluids where it is needed for muscle contraction, heart contraction, blood clotting, secretion of hormones and enzymes, and sending messages through the nervous system.

Calcium is a popular phosphate binder as it binds dietary phosphate when given with meals. It also has the added advantage of preventing or reversing negative skeletal calcium balance which is thought to contribute to the increased fracture risk in CKD.

Calcitriol is a synthetic vitamin D analogue which is active in the regulation of the absorption of calcium from the gastrointestinal tract and its utilization in the body. The kidneys of uremic patients cannot adequately synthesize calcitriol, the active hormone formed from precursor vitamin D. Resultant hypocalcaemia and secondary hyperparathyroidism are a major cause of the metabolic bone disease of renal failure.

Mode of Action:

Calcium carbonate works in the blood to treat or prevent negative calcium balance seen in low serum calcium conditions.

Calcitriol is the active form of Cholecalciferol (vitamin D3) which acts by stimulating the Calcium and Phosphate absorption and increasing reabsorption of calcium by the kidneys. It stimulates bone resorption, renal tubular resorption. The drug also decreases PTH levels and restores bone mineralization.

Indications:

Oshecad-CT tablet is used for symptom relief in:

- Hypo calcaemic
- Renal osteodystrophy
- Osteomalacia
- Secondary hyperparathyroidism

Pharmacodynamics:

Calcium (Ca²⁺) plays a pivotal role in the physiology and biochemistry of organisms and the cell. It plays an important role in signal transduction pathways, where it acts as a second messenger, in neurotransmitter release from neurons, contraction of all muscle cell types, and fertilization. Many enzymes require calcium ions as a cofactor, those of the blood-clotting cascade being notable examples. Extracellular calcium is also important for maintaining the potential difference across excitable cell membranes, as well as proper bone formation.

Calcitriol is a biologically active calcitrophic hormone with anti-osteoporotic, immunomodulatory, anticarcinogenic, antipsoriatic, antioxidant, and mood-modulatory activities. Its main sites of action are the intestine, bone, kidney and parathyroid hormone. As an active form of vitamin D3, calcitriol elevates the plasma levels of calcium by stimulating intestinal calcium uptake, increasing reabsorption of calcium by the kidneys, and possibly increasing the release of calcium from skeletal stores.

Drug Interactions: ELEMENTAL CALCIUM may interact with heart-related medicine (digoxin), antibiotics (doxycycline, oxytetracycline), water tablets (chlortalidone, bendroflumethiazide), fluoride preparations used to prevent tooth decay.

Dosage and administration:

The recommended dosage of **Oshecad-CT** is:

- One tablet is taken two times a day

