

Calcium Carbonate

Calcium carbonate is an antacid and dietary supplement. It can cause hypercalcemia, milk-alkali syndrome, and rebound hyperacidity. This medication should be administered cautiously in patients taking other medications because it is a chelating agent so can reduce the bioavailability of other drugs like antibiotics.



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Clinical Use

Antacid

Ant-acid-bottle

Calcium carbonate is the most potent antacid for neutralizing acid in the stomach. This action occurs due to its buffering effect. Patients with gastrointestinal distress such as indigestion and heartburn can benefit from calcium carbonate.

Dietary Supplement

Nutritional-plate

Calcium carbonate can be used as a calcium supplement for patients with osteomalacia/rickets, osteoporosis, muscle disease, and hypoparathyroidism. It can also be used in patients who require more than usual, such as pregnant and nursing mothers as well as patients taking certain medications like prednisone, phenobarbital, or phenytoin.

Side Effects

Hypercalcemia

Hiker-calcified-cow

An increase in calcium intake can cause mild hypercalcemia. Recommendations for one's daily intake of calcium ranges from 400-1200 mg/day depending on age and gender. A daily intake of 1500 mg calcium does not benefit bone, and intake above 2000 mg increases the risk of hypercalcemia and kidney stones.

Milk-Alkali Syndrome

Milk-Elk

A very high intake of milk or calcium carbonate can cause a triad of hypercalcemia, metabolic alkalosis, and renal insufficiency. It is the third most common cause of hypercalcemia in hospitalized patients behind malignancy and hyperparathyroidism.

Rebound Hyperacidity

Rebounding Hiker-acidic-lemon

Consuming calcium carbonate for a long period of time can induce compensatory mechanisms resulting in acid rebound. Several factors may contribute to this process. Calcium chloride is made slowly inside the stomach by the conversion of Calcium carbonate, which induces hypersecretion of acid.

Considerations

Chelating Agent

Cleats-on Agent

Calcium is a multivalent cation that can bind or chelate certain drugs, resulting in decreased absorption. Consequences that can occur are reduced bioavailability. Potentially affected drugs include tetracyclines, quinolone antibiotics, bisphosphonates, iron, and levothyroxine.
