Osteo D Cholecalciferol (Vitamin D supplement)

In Osteo D injectable solution, each 1 ml ampoule contains cholecalciferol as vitamin D3 200000 international units whereas in Osteo D oral solution each 1 ml solution contains cholecalciferol BP as vitamin D3 5micrograms or 200 IU.

Vitamin D 3 is an essential vitamin for normal bone growth and development in human beings. It is also important in the maintenance of bone density. Colecalciferol is necessary for the utilization of minerals; calcium and phosphorus.

In the body, Vitamin D acts as a hormone and increases reabsorption of calcium and phosphorus by the nephrons in the kidneys and increased bone turnover.

What are the indications of Vitamin D supplementation?

During the period of breastfeeding infants who are not exposed to sunlight are do not obtain enough vitamin D from breast milk so as to satisfy the needs beyond early infancy. This happens because its content in breast milk is as low as 1-10 IU per 250 milliliters of breastmilk.

The vitamin D that is available to the infant in the first six months of life mainly depends on the vitamin D status of the mother while she was pregnant and later on it depends on the infant's diet and exposure to sunlight.

Lack of enough Vitamin D or its deficiency can result in rickets. A dietary vitamin D is therefore recommended to correct for lack of exposure to ultraviolet light fulfilling the required amount.

Emerging studies suggest that optimal vitamin D status plays a role in the protection against the development of other diseases by improving immunity.

Vitamin D is also important for the normal growth of the children and it helps to prevent rickets.

Dosage and administration

Osteo D can be used in both curative and preventive management.

In Curative treatment

- In rickets use one ampoule every 2 weeks for one month then 1 ampoule every 4 months.
- Osteoporosis 1 ampoule every two weeks for three months
- Osteomalacia 1 ampoule every two weeks for three months
- Tetany caused by hypocalcemia 1 ampoule every 4 months which may be increased to two ampoules.
- Renal osteodystrophy 1 ampoule daily or as advised by the doctor.
- Menopause 1 ampoule every 6 months.

For Preventive measures

- In pregnancy 1 ampoule every 7th or 7th month.
- During breastfeeding 1 ampoule every 6 months.
- Children up to 5 years 1 ampoule every 6 months.
- Adolescents and elderly 1 ampoule every 6 months.

Note that the injectable solution can be administered through the oral or intramuscular route. And prevention should be started and continued to the 5th year of life.

Oral solution

Colecalciferol osteo D is recommended 5- 0 mcg or 1-2 MLS (200-400 IU) per day or as directed by the physician.

Side effects

Generally, all nutritional supplements are considered safe and well tolerable. However few side effects can occur associated with vitamin uses such as hypercalcemia syndrome or calcium intoxication depending on the severity and duration of hypercalcemia.

Occasional acute symptoms include anorexia, headache, nausea, vomiting, abdominal pain or stomachache, and constipation.

Precautions

Individuals with the following medical conditions should exercise caution when considering the use of osteo D supplements.

- Hypertension (high blood pressure)
- Cardiac or heart conditions
- Kidney failure.

Vitamin D must be taken with adequate amounts of magnesium and calcium. When calcium is low due to insufficient vitamin D and calcium intake, the body activates the parathyroid gland which then produces parathyroid hormone.

This hormone kick starts vitamin D hormone production and assists the removal of vitamin D from the bones to be used on more important functions such as neutralizing the body’s acidity.

Contraindications of vitamin D supplementation

Colecalciferol is contraindicated in all diseases that are associated with hypercalcemia or excessive serum calcium levels.

It is also contraindicated in all patients who have an allergy to cholecalciferol or drugs in the same class as it. Colecalciferol is contraindicated when there is evidence of vitamin D toxicity.

Use in pregnancy and lactation

There is no evidence suggesting that cholecalciferol is teratogenic when used in pregnancy even at high doses. It should then be used in pregnancy only if the benefits outweigh the risks.

It should be assumed that exogenous cholecalciferol crosses to the breast milk. In the view of the potential for hypercalcemia in the mother and for adverse reactions from cholecalciferol in nursing infants, mothers may breastfeed while taking cholecalciferol provided that the serum levels of the mother and infant are monitored

Drug interactions of vitamin D

Since cholecalciferol is one of the most important metabolites of vitamin D, pharmacological doses and its derivatives should be withheld during treatment with cholecalciferol to avoid possible hypercalcemia and other side effects.

Dietary instructions concerning calcium supplements should be strictly observed and an uncontrolled intake of calcium-containing drugs be avoided.

Concomitant treatment with thiazide diuretics increases the risk of hypercalcemia. Colecalciferol doses should be determined with care on patients undergoing treatment with digitalis as hypercalcemia in such cases can trigger cardiac arrhythmias.

Magnesium containing medicines such as antacids may cause hypermagnesemia and should therefore not be taken during the therapy with cholecalciferol by patients on chronic renal dialysis.

What to do in case of overdose

Acute symptoms such as anorexia, vomiting, and constipation.

Chronic symptoms such as dystrophy, sensory disturbance possibly fever with polyuria, dehydration, apathy, arrested growth, and urinary tract infections.

Hypercalcemia ensues, with metastatic calcification of the renal cortex, myocardium, lungs, and pancreas. The treatment is immediate gastric lavage or induction of vomiting to prevent further absorption. Liquid paraffin should be administered to promote fecal excretion.

Repeated serum calcium determination is advisable. If elevated calcium levels persist in the serum then phosphates and corticosteroids may be administered and measures included to bring about adequate diuresis.