

Monitored vitamin D therapy safe for patients with high blood calcium levels

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Patients with a gland disorder that causes excessive calcium in their blood who also have vitamin D deficiency can safely receive vitamin D treatment without it raising their calcium levels, a new study has determined. The results with one-year follow-up will be presented Tuesday at The Endocrine Society's 94th Annual Meeting in Houston.

Doctors often fear that raising vitamin D levels will further raise calcium [blood levels](#) in patients with primary hyperparathyroidism—in which glands in the neck produce too much of the parathyroid hormone, which controls [calcium levels](#). Yet without enough vitamin D, people are at increased risk of osteoporosis and broken bones. Vitamin D helps the body absorb calcium and is vital for bone health.

"These patients need close monitoring every three to four months during vitamin D replacement therapy," said Dima Abdelmannan, MD, an assistant professor at Case Western Reserve University in Cleveland and an endocrinologist at Cleveland Veterans Affairs (VA) Medical Center.

Abdelmannan, who presented the research findings, said doctors should measure blood levels of calcium and parathyroid hormone along with vitamin D levels throughout treatment.

"Measuring vitamin D levels alone may not be helpful in the management of [vitamin D deficiency](#) in patients with primary hyperparathyroidism," she said. "The commercially available blood test for vitamin D level—the 25-hydroxyvitamin D—has limitations."

For this study, Abdelmannan and colleagues reviewed the medical records of 32 patients at the VA Medical Center who had both primary hyperparathyroidism and vitamin D deficiency. All 10 women and 22 men had hypercalcemia, or high calcium in the blood, defined as a level greater than 10.1 milligrams per deciliter (mg/dL). They also had vitamin D levels below the cutoff for normal of 30 nanograms per deciliter (ng/dL) on the 25-hydroxyvitamin D test for vitamin D.

Patients received either vitamin D2 (ergocalciferol) or vitamin D3 (cholecalciferol) at an average daily dose of 3,630 International Units, or IU. Most patients had their parathyroid hormone, calcium and vitamin D levels checked every three months for a year after vitamin D treatment.

Vitamin D levels returned to normal with treatment and remained normal at all intervals. Abdelmannan said the average calcium blood level "remained virtually unchanged" from the pretreatment level of 10.7 mg/dL. The calcium level was 10.8 mg/dL at three months after treatment, 10.6 at six months and 10.7 at 12 months, the authors reported. Despite calcium levels not rising, [parathyroid hormone](#) levels decreased, from an average of 124 picograms per deciliter (pg/dL) before treatment to 103 pg/dL one year after treatment.

Hyperparathyroidism develops in approximately 100,000 Americans every year and affects twice as many women as men, according to the National Institutes of Health. The risk increases with age. Although the disorder usually has no symptoms, if calcium levels are very high, it can cause bone aches, tiredness and kidney stones, Abdelmannan said.

The Endocrine Society, in its 2011 guideline on treating vitamin D deficiency, suggests that [patients](#) with primary hyperparathyroidism and vitamin D deficiency receive [vitamin D](#) treatment as needed and that serum ([blood](#)) calcium levels should be monitored.

Provided by The Endocrine Society

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