

Symptomatic Hypercalcaemia Following Teriparatide Therapy For Osteoporosis: A Case Report

Kesiya V Chacko¹, Nissy Mariam Reji¹, Anulekha Mary John²

¹ Pharm D Intern, Nazareth College of Pharmacy, Othara, Thiruvalla

² Professor, Department of Endocrinology, Believers Church Medical College Hospital, Thiruvalla

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Correspondence

Kesiya V Chacko

E-mail: kesiyavchacko@gmail.com

Access this article online

Website: www.bemjjournal.com

ABSTRACT

Teriparatide treatment was initiated for a 75-year-old woman who had been diagnosed with postmenopausal osteoporosis, had a vertebral compression fracture, and had long-standing diabetes mellitus and hypertension. She experienced mild hypercalcemia following about 11 months of treatment, with albumin-corrected calcium levels increasing from 10.15 to 10.57 mg/dL. She did not have any systemic symptoms, but she did report generalised bone pain. She was instructed to check her levels of parathyroid hormone, calcium, and phosphorus, and Teriparatide was stopped. While taking her current medications, her blood pressure and blood sugar levels remained under control. The case emphasises the value of routine biochemical monitoring while on Teriparatide, particularly for older patients with numerous comorbidities. Potential complications can be avoided and safe continuation of osteoporosis treatment can be ensured by early detection and management of hypercalcemia.

KEYWORDS Teriparatide, Hypercalcaemia, Osteoporosis, Post menopausal woman

BACKGROUND

Osteoporosis is a common health issue for postmenopausal women. It increases the risk of fractures and related health problems. Teriparatide, a form of human parathyroid hormone (1-34), is often used to promote bone growth in severe osteoporosis. Teriparatide helps bones only when given in the right amount and pattern. Once-daily injections briefly stimulate bone-building cells, making bones stronger. Too little has no

effect, and too much or continuous exposure weakens bone and causes side effects. While it is usually well tolerated, Teriparatide can sometimes disrupt calcium metabolism and lead to high levels of calcium in the blood. These metabolic issues are often overlooked, especially in older patients with other health problems like diabetes and high blood pressure, who may already have trouble managing calcium in their kidneys. Regular checks of calcium and parathyroid hormone levels during treatment are important for patient safety. This case highlights

the importance of careful monitoring and personalized supplementation for patients on long-term Teriparatide treatment to avoid negative effects and maximize the benefits of the therapy.

CASE PRESENTATION

A 75-year-old woman presented to our outpatient clinic for a routine review after several months of follow-up for metabolic bone disease. She had a long history of diabetes mellitus and systemic hypertension, both well controlled with regular medications and lifestyle measures. She had previously sustained a compression fracture of a thoracic vertebra and was diagnosed with postmenopausal osteoporosis based on bone mineral density testing. Owing to her fracture history and low bone density, she was started on Inj. Teriparatide 20 micrograms subcutaneously once daily and 24-month therapy was planned; after making sure she had normal calcium parameters and Parathyroid hormone level. In addition, calcium and vitamin D supplements were given. As a routine practice serum calcium was measured again after 4 weeks of starting Inj. Teriparatide. This remained within normal limits.

At her review nearly one year after starting Teriparatide, she reported generalized bone pain and fatigue. She denied experiencing weight loss, nausea, or vomiting. Her diet and physical activity remained stable. Glycaemic control was also better. She was following her medication plan, which included insulin for blood sugar control and treatment for high blood pressure.

During the examination, she appeared well-nourished, weighing about 69 kilograms, and her blood pressure was normal. Peripheral pulses were present but weak, and there was mild crackling in the right knee. The skin exam revealed signs of diabetic dermopathy.

Initial lab tests showed a slight increase in albumin-corrected serum calcium, rising from 10.15 to 10.57 milligrams per decilitre during the review period. Kidney and liver function tests were normal. A urinary microalbumin screening from the previous year was also normal, and an eye exam showed no signs of diabetic retinopathy.

Given the rise in calcium levels and bone pain, injection Teriparatide was stopped. The patient was told to repeat tests for calcium, phosphorus, and parathyroid hormone at her next appointment. Her blood pressure and diabetes medications remained the same. She received advice on staying hydrated, exercising regularly, and keeping a balanced diet.

On follow-up after discontinuation of Teriparatide, her serum calcium level normalized to 9.5 mg/dl. At 4-month follow-up after discontinuation of Teriparatide, the patient remained clinically stable with significant symptomatic improvement. The albumin-corrected serum calcium was found to be 9.38 mg/dl. This series of events supported the diagnosis of hypercalcemia caused by Teriparatide in a patient with several metabolic issues. It guided the choice to stop the medication and closely monitor her biochemical levels.

Table 1

INVESTIGATION	PRIOR TO TREATMENT (October 2024)	4 WEEKS AFTER STARTING TREATMENT (December 2024)	DURING TREATMENT (October 2025)	AFTER DISCONTINUATION OF TREATMENT (December 2025)	FOLLOW UP (February 2026)	REFERENCE RANGE
Calcium	9.42	10.4	10.66	9.5	9.7	8.7 - 10.7 mg/dL
Albumin	4.07	4.31	4.11	-	4.4	3.5 - 4.8 g/dL
Albumin corrected calcium	9.36	10.15	10.57	-	9.38	8.5 - 10.2 mg/dL
Parathyroid Hormone (PTH)	89.80	-	-	72.78	48.72	15 – 88 pg/mL

INVESTIGATIONS

BMD (October2024):

Table 2

REGION	BMD (g/cm2)	T - SCORE	Z - SCORE
Neck Left	0.647	-2.8	-1.0
Total Left	0.785	-1.8	-0.1
Neck Right	0.713	-2.3	-0.5
Total Right	0.789	-1.7	-0.1
L1	0.599	-4.4	-2.7
L2	0.671	-4.4	-2.7
L3	0.799	-3.3	-1.6
L4	0.826	-3.1	-1.4
L1-L4	0.736	-3.7	-2.0

MANAGEMENT

Because of the increased calcium, Teriparatide was stopped.

It was recommended to repeat the parathyroid hormone and calcium parameters.

COMPARISON WITH LITERATURE

According to earlier reports, 1-3 percent of Teriparatide users experience temporary hypercalcemia, which is frequently asymptomatic¹. Persistent hypercalcaemia necessitating cessation of therapy occurs in fewer than 1% of patients². The present case is consistent with the limited published reports of mild yet persistent hypercalcaemia³, especially among patients with impaired renal function or concomitant use of calcium and vitamin D supplementation.

DISCUSSION

One rare but clinically significant side effect of Teriparatide is hypercalcemia. It usually appears 4–6 hours after injection and goes away in 24 hours, but in rare instances, a persistent elevation calls for discontinuation⁴. Despite moderate supplementation, the patient's calcium levels increased over the course of 11 months, from 9.36 to 10.57 mg/dL. On follow-up after discontinuation of Teriparatide, her serum calcium level normalized to 9.5 mg/dl. This series of events supported the diagnosis of hypercalcemia caused by Teriparatide in a patient with several metabolic issues.

Postmenopausal status, concurrent calcium and vitamin D intake, and decreased skeletal uptake capacity as a result of chronic diabetes are all potential contributing factors⁵. There is also a rare possibility of a patient developing primary hyperparathyroidism.

This case highlights the necessity of regular and periodic monitoring of serum calcium and relevant metabolic parameters in patients receiving Teriparatide, to enable early detection of abnormalities and to prevent treatment related complications.

LEARNING POINTS

Mild but persistent hypercalcemia can happen during Teriparatide treatment^{6,7}, especially when calcium and vitamin D are added. Routine recommendation is to check serum calcium levels before starting injection Teriparatide and once 4 weeks later. Further monitoring beyond this depends on the individual's calcium levels and clinical judgment (e.g., if hypercalcaemia was noted or if symptoms develop). If hypercalcaemia doesn't go away, injection Teriparatide must be discontinued and calcium parameters, PTH and vitamin D levels checked. Patient education about recognizing symptoms (fatigue, nausea, bone pain) enhances safety.

REFERENCES

1. Hajime M, Okada Y, Mori H, Tanaka Y. A case of Teriparatide-induced severe hypophosphatemia and hypercalcemia. *J Bone Miner Metab.* 2014;32(5):601-4. doi:10.1007/s00774-014-0564-z.
2. Lin J, Tjokrosaputro PR, Ang BH, Chew CK, Xu C. Prolonged hypercalcemia induced by Teriparatide: a case report and literature review. *Osteoporos Int.* 2025;36(9):1763-6. doi:10.1007/s00198-025-07569-z.
3. Milosavljevic J, Thomas AM. Teriparatide associated late hypercalcemia: a report of two cases and literature review. *J Community Hosp Intern Med Perspect.* 2022;12(1):54-58. doi:10.55729/2000-9666.1010.
4. Karatoprak C, Kayatas K, Kilicaslan H, Yolbas S, Yazimci NA, Gümüşkemner T, Demirtunc R. Severe hypercalcemia due to Teriparatide. *Indian J Pharmacol.* 2012;44(2):270-1. doi:10.4103/0253-7613.93869.
5. Reisian S, Bonakdaran S, Moradi A, Yaghoubi MA. Teriparatide-induced Severe Persistent Hypercalcemia in an Osteoporotic Patient: A Case Report and Literature Review. *Arch Bone Jt Surg.* 2025;13(3):170-175. doi:10.22038/abjs.2024.80907.3690.
6. McCarroll K, Carroll T, Neville M, Fitzpatrick D, Lannon R. Delayed and significant hypercalcaemia due to Teriparatide therapy: a case report and review. *Osteoporos Int.* 2024;35(7):1299-1302. doi:10.1007/s00198-024-07082-9.
7. Wermers RA, Abate EG. Medication-Induced Hypercalcemia. In: *Hypercalcemia: Clinical Diagnosis and Management.*

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