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# CASE REPORT: ATORVASTATIN - INDUCED PERIPHERAL NEUROPATHY IN AN ELDERLY PATIENT WITH CORONARY ARTERY DISEASE

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**Abstract:**

*An 81- year- old man with coronary artery disease, hypertension, and benign prostatic hyperplasia developed bilateral lower limb pain suggestive of peripheral neuropathy during long-term atorvastatin therapy. Cardiac evaluation was unremarkable, and glycemic parameters remained within the normal range, making diabetic neuropathy less likely. This case emphasizes the importance of early recognition of statin-associated neurological adverse effects, particularly in elderly patients receiving long-term therapy.*

***Keywords:*** *Atorvastatin, Statin-induced neuropathy, Peripheral neuropathy, adverse drug reaction, and coronary artery disease.*

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## INTRODUCTION:

Statins, also known as hydroxymethylglutaryl coenzyme-A (HMG-CoA) reductase inhibitors, are widely prescribed medications that effectively reduce low-density lipoprotein cholesterol (LDL-C) levels, thereby reducing cardiovascular morbidity and mortality.(1)Their efficacy in secondary prevention of atherosclerotic and cardiovascular disease is well established.(2)Despite their favorable safety profile, statins have been associated with adverse neuromuscular effects ranging from mild myalgia to severe rhabdomyolysis. (3,4) Peripheral neuropathy is an uncommon but increasingly recognized adverse effect associated with prolonged statin therapy.(5)Lipophilic statins, such as atorvastatin, demonstrate greater penetration into extrahepatic tissues and contribute to peripheral nerve toxicity through mitochondrial dysfunction, oxidative stress, and coenzyme Q10 depletion.(6,7)

## CASEREPORT:

An 81-year-old man presented to the cardiology outpatient clinic for routine follow-up with complaints of bilateral lower-limb pain associated with neuropathic symptoms. His medical history was significant for coronary artery disease with single-vessel disease, status post Percutaneous Transluminal Coronary Angioplasty (PTCA) to the proximal and distal left anterior descending artery with drug-eluting stent implantation in 2016, hypertension, and benign prostatic hyperplasia. The patient had been receiving atorvastatin 10 mg once daily as long-term secondary cardiovascular prevention. During a follow-up visit on December 27, 2024, the patient reported intermittent episodes of chest discomfort; cardiac evaluation, including a treadmill exercise test, was normal.

During the follow-up visit on October 10, 2025, the patient complained of persistent bilateral leg pain, a clinical feature suggestive of peripheral neuropathy. There was no documented history of alcohol abuse, hypothyroidism, nutritional deficiency, connective tissue disorder, or exposure to neurotoxins. Laboratory investigations revealed an HbA1c level of 5.8% and LDL cholesterol level of 58 mg/dL. The patient's well-controlled glycemic status made diabetic peripheral neuropathy an unlikely alternative diagnosis. Subsequent follow-up on October 22, 2025, showed partial symptomatic improvement, while further evaluation on January 9, 2026, demonstrated marked clinical improvement following symptomatic management and clinical monitoring. The patient's medications included Cilnidipine 10 mg once daily, Clopidogrel plus aspirin 75 mg once daily, Atorvastatin 10 mg once daily, Sodium bicarbonate 500 mg twice daily, Nebivolol 5 mg once daily, Tamsulosin 0.4 mg once daily, Esomeprazole, and Deflazacort 6 mg once daily.

Based on the temporal association between prolonged atorvastatin exposure and the onset of neuropathic symptoms along with improvement during follow-up and the absence of other major etiologies, a diagnosis of probable atorvastatin-induced peripheral neuropathy was considered.

## DISCUSSION:

Statin-associated peripheral neuropathy is an uncommon but increasingly recognized adverse effect of long-term statin therapy.(5)Epidemiological studies have reported that patients receiving long-term statin therapy may have a higher incidence of peripheral neuropathy than non-users.(8)Atorvastatin is a lipophilic statin that can penetrate extrahepatic tissues more readily than hydrophilic statins, potentially increasing the risk of neuromuscular adverse effects. The exact pathophysiology remains incompletely understood, but several mechanisms have been proposed. First, depletion of coenzyme Q10 impairs mitochondrial oxidative phosphorylation. Second, increased oxidative stress and neuronal injury. Third, axonal degeneration secondary to altered cholesterol metabolism, and finally, impaired neuronal membrane stability and nerve conduction. (6,7)

In this case, diabetic neuropathy was considered less likely due to consistently controlled glycemic indices. Additionally, cardiac causes of lower-limb symptoms were excluded by normal echocardiographic and treadmill findings. The clinical improvement observed on follow-up further supported the likelihood of drug-induced neuropathy. Several published case reports and observational studies have demonstrated that prolonged statin exposure causes sensory and sensorimotor neuropathies, particularly among elderly patients receiving long-term therapy. Gaist etal. demonstrated an increased risk of idiopathic polyneuropathy among long-term statin users. Similarly, several published case reports have demonstrated symptom resolution following discontinuation or dose modification of statin therapy.

Upon evaluation at our ADR Monitoring Center, the causality was determined to be "probable" using the Naranjo Adverse Drug Reaction Probability Scale. The type of ADR was classified as "Type C" according to the Rawlins and Thompson classification and was assessed as "Level 3, Moderate" in terms of severity based on the Modified Hartwig and Siegel Severity Assessment Scale. As per the WHO criteria, the seriousness of the reaction was categorized as "Other Medically Important Condition", and the outcome of the reaction was "Recovering." Additionally, according to the Schumock and Thornton Preventability Scale,

the ADR was deemed "Non-preventable." The assessment of causality and other attributes of the ADR was conducted using established scales and criteria to ensure a comprehensive and standardized evaluation. Atorvastatin therapy is a cornerstone in the secondary prevention of cardiovascular disease and aims to reduce low-density lipoprotein cholesterol levels and cardiovascular risk. Prompt recognition and management of atorvastatin-induced peripheral neuropathy are crucial to prevent further neurological complications, minimize morbidity, and improve patient outcomes (8, 9, 10)

Healthcare professionals should maintain vigilance for neuropathic symptoms in patients receiving chronic statin therapy, especially in elderly individuals with polypharmacy and multiple comorbidities.

## CONCLUSION:

The case report emphasizes the potential association between long-term atorvastatin therapy and peripheral neuropathy in an elderly patient with coronary artery disease. Although rare, statin-induced neuropathy should be considered in patients presenting with unexplained neuropathic symptoms after exclusion of other common etiologies. Early recognition and careful clinical evaluation may help reduce morbidity and improve patient outcomes.

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## DECLARATION OF PATIENT CONSENT:

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Nil.

## CONFLICTS OF INTEREST:

There are no conflicts of interest.

## REFERENCES:

1. Chong PH, Boskovich A, Stevkovic N, Bartt RE. Statin-associated peripheral neuropathy: review of the literature. Pharmacotherapy. 2004;24(9):1194-203.
2. Stone NJ, Robinson JG, Lichtenstein AH, Merz CNB, Blum CB, Eckel RH, et al. 2013 ACC/AHA guideline on treatment of blood cholesterol. Circulation. 2014;129(25 Suppl 2):S1-S45.
3.Baigent C, Keech A, Kearney PM, Blackwell L, Buck G, Pollicino C, et al. Efficacy and safety of cholesterol-lowering treatment: prospective meta-analysis. Lancet. 2005;366(9493):1267-78.
4. Thompson PD, Clarkson P, Karas RH. Statin-associated myopathy. JAMA. 2003;289(13):1681-90.
5. Jeppesen U, Gaist D, Smith T, Sindrup SH. Statins and peripheral neuropathy. Eur J Clin Pharmacol. 1999;54(11):835-8.
6. Golomb BA, Evans MA. Statin adverse effects: a review of the literature and evidence for a mitochondrial mechanism. Am J Cardiovasc Drugs. 2008;8(6):373-418.
7. Al-Kuraishy HM, Al-Gareeb AI, Hussien NR, Al-Naimi MS, Rasheed HA. Statins and peripheral neuropathy: an update. J Pak Med Assoc. 2019;69(Suppl 3)(8):S108-S112.
8. Gaist D, Jeppesen U, Andersen M, García Rodríguez LA, Hallas J, Sindrup SH. Statins and risk of polyneuropathy: a case-control study. Neurology. 2002;58(9):1333-7.
9.Ramkumar S, Raghunath A, Raghunath S. Statin therapy: review of safety and potential side effects. Acta Cardiol Sin. 2016;32(6):631-639.
10. Vaughan TB. Case report of atorvastatin-induced peripheral neuropathy. J Am Board Fam Med. 2005;18(5):416-9.