



Case

A 78-year-old male with hyperlipidemia treated with atorvastatin for 4 years experienced progressive lower extremity weakness for 2 months. After being diagnosed with statin induced necrotizing autoimmune myopathy (NAM), he was treated with IVIG for 3 days and started on daily prednisone. He was admitted to the acute inpatient neurorehabilitation unit (NRU) at a functional level of dependent for ambulation and general transfers, maximum assist for bed mobility, and modified assist for hygiene. He spent 24 days in the NRU participating in physical and occupational therapy and neuropsychology. He was discharged to a skilled nursing facility able to ambulate 15 feet and was at a functional level of moderate assist for general transfers, minimum assist for bed mobility, modified independent for wheelchair mobility, and supervision for hygiene.



Discussion

Acute NAM is treated medically with IVIG and immunosuppressants. Patients must continue taking immunosuppressants throughout their lives as discontinuation commonly leads to relapse. Despite medication adherence, approximately 55% of patients relapse. There is typically ongoing need for physical and occupational therapy in the outpatient setting following discharge from acute rehabilitation. Continued participation in therapeutic exercise results in maximized regain of strength and independence, with possible eventual return to pre-disease functional levels. Regular physiatric and therapeutic follow up may lead to sooner identification of a relapse and initiation of treatment, which increases the likelihood of full recovery.

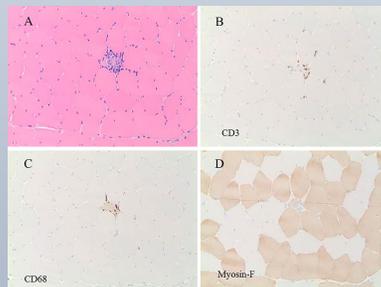


Figure 1. Muscle Biopsy of patient with NAM, adapted from Saleh, et al. 2019.

- A) H&E stain showing necrosis of muscle fibers and inflammatory cells.
- B) CD3 immunohistochemistry (IHC) showing T lymphocytes around necrotic fibers.
- C) CD68 IHC showing macrophages in necrotic fibers.
- D) Fast myosin IHC showing a normal pattern of type 1 and type 2 fibers.

Conclusion

Myalgia and myopathy are often mentioned as side effects of statin medications, or HMG-coA reductase inhibitors. While rare, more dangerous side effects are rarely discussed, including necrotizing autoimmune myopathy (NAM). This case demonstrates the positive effects rehabilitation can have on the functional status of a patient with NAM. As NAM is a relatively rare side effect of statins, prognosis and effects of rehabilitation are not well established and there would be benefit in further study.

References:

- Babu SS, Khanna L, Saran RK, Mittal G, Peter S, Sebastian I. Necrotizing autoimmune myopathy. *Ann Indian Acad Neurol.* 2016;19(2):288-290.
- Carroll MB, Newkirk MR, Sumner NS. Necrotizing Autoimmune Myopathy: A Unique Subset of Idiopathic Inflammatory Myopathy. *J Clin Rheumatol.* 2016;22(7):376-380.
- Kassardjian CD, Lennon VA, Alfugham NB, Mahler M, Milone M. Clinical features and treatment outcomes of necrotizing autoimmune myopathy. *JAMA Neurol.* 2015;72(9):996-1003.
- Ramanathan S, Langguth D, Hardy TA, et al. Clinical course and treatment of anti-HMGCR antibody-associated necrotizing autoimmune myopathy. *Neural Neuroimmunol NeuroInflammation.* 2015;2(3):e96.
- Saleh Y, Herzallah K, Hassanein M, Chang HT. Statin-induced necrotizing autoimmune myopathy: An uncommon complication of a commonly used medication. *Journal of the Saudi Heart Association.* 2019;31(4):269-272. doi:10.1016/j.jsha.2019.08.001
- Sharma P, Timilsina B, Adhikari J, Parajuli P, Dhital R, Tachamo N. Statin-induced necrotizing autoimmune myopathy: an extremely rare adverse effect from statin use. *J Community Hosp Intern Med Perspect.* 2019;9(6):503-506.

The authors of this study have nothing to disclose.