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# Rapidly Progressive Statin Induced Necrotizing Myopathy

Taha Ashraf  
*Henry Ford Health System*

Yusuf Alalwan  
*Henry Ford Health System*

Eric Scher  
*Henry Ford Health System*

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## INTRODUCTION

- Statins are common lipid lowering agents used worldwide to reduce cardiovascular mortality. With its ubiquitous use, physicians need to be aware of its potentially life threatening myopathies.
- Myopathies vary widely in severity from myalgia's to life threatening rhabdomyolysis and necrotizing autoimmune myopathy

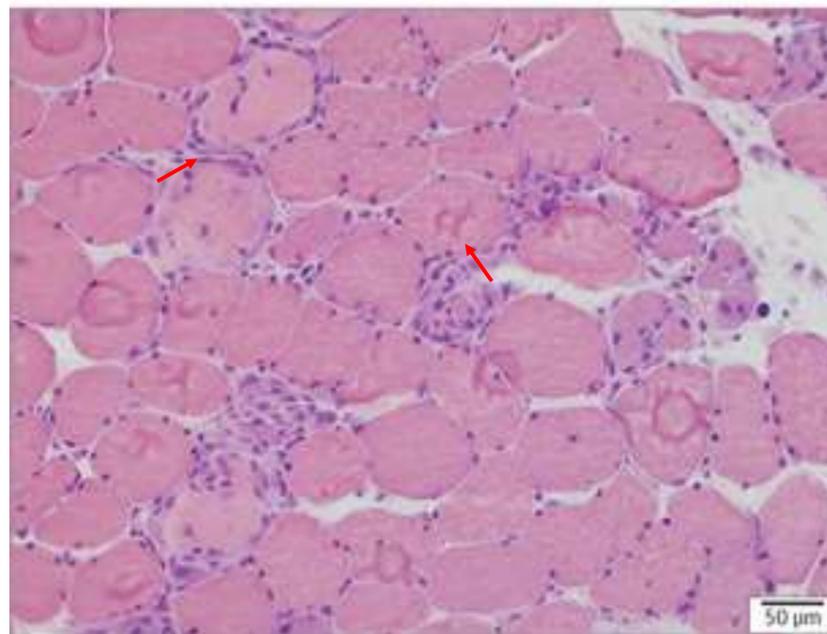
## CASE PRESENTATION

- A 50 year old male with past medical history of coronary artery disease and alcoholic liver cirrhosis was admitted from a subacute rehabilitation facility for symptomatic ascites and evaluation for liver transplant.
- Notably he had multiple recent admissions for spontaneous bacterial peritonitis
- He endorsed fatigue and difficulty mobilizing over the past week, initially attributed to deconditioning from recent hospital stays
- Over 3 days he developed rapidly progressive proximal muscle weakness, became bed bound and unable to move his limbs against gravity. No fevers, muscle tenderness or rash noted.
- Lab work remarkable for Creatinine 1.7 mg/dL (resolving AKI from previous admission), CPK 1281 IU/L.
- No evidence of spontaneous bacterial peritonitis or other infectious process
- Medication review noted 80mg of Atorvastatin was started 1 month prior which was ceased
- Day 4 patient developed dysphagia requiring a dohoff. He became tachypneic with a new 2 L O<sub>2</sub> oxygen requirement.

## CASE PRESENTATION

- Chest X-Ray showed no acute abnormality
- EMG demonstrated fibrillations indicative of muscle irritability. Negative inspiratory force measurements were reduced
- Urgent muscle biopsy was obtained and he was started on IVIG and IV methylprednisolone
- Over 5 days, patient came off oxygen, tube feedings and became able to sit with minimal assistance
- Muscle biopsy demonstrated moderately active necrotizing myopathy with myofiber necrosis consistent with a statin induced necrotizing myopathy
- Extensive serological work-up was negative for other potential causes

A Hematoxylin-eosin-stained section



**Figure 1:** Hematoxylin-eosin–stained section of a vastus lateralis muscle showing numerous necrotic and regenerating fibers.<sup>1</sup>

## DISCUSSION

- Necrotizing myopathies may be secondary to autoimmune (NAM) or toxic etiologies. Autoimmune causes are associated with anti-SRP or anti-HMGCR antibodies, though one-third are not associated with a specific antibody<sup>1</sup>
- NAM associated with HMGCR-IgG have a relatively milder course and its negativity in this case is consistent with its rapidly progressive sequence
- The largest risk factor is by far, statins, atorvastatin and simvastatin the common reported<sup>2</sup>. Of note, Atorvastatin was recently started, one month prior to symptom onset on our patient
- As in our patient, EMG demonstrates fibrillations indicative of muscle irritability and biopsy show fiber necrosis (100%) and regeneration often confined to perivascular sites in perimysium<sup>2</sup>
- Although no randomized clinical trials exist to guide therapy in NAM, early dual treatment with IVIG and corticosteroids together is recommended<sup>1</sup>

## REFERENCES

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## CONCLUSION

This case highlights a potentially fatal adverse effect of statins, a commonly used drug class by physicians worldwide. Physicians should be vigilant for significant myopathy when using these medications as swift initiation of treatment particularly in necrotizing forms improve outcomes<sup>1</sup>