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Letter to the Editor

Can Statins Actually Trigger a Myasthenic Crisis?

Josef Finsterer
Neurology & Neurophysiology Center, Vienna, Austria

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Corresponding Author: **Josef Finsterer**

Letter to the Editor

We read with interest the article by Yoo *et al*. on a retrospective study examining whether starting statins increases the risk of a myasthenic crisis in patients with myasthenia gravis (MG) within 365 days before and after starting statin therapy [1]. Among the 45 MG patients who met the inclusion criteria, the risk of at least one myasthenic crisis in the first 30 days after starting statin therapy was higher, especially in patients over 65 years old, in women, and in those taking lipophilic statins [1]. It was concluded that close monitoring during the initial phase of statin therapy is necessary in MG patients [1]. The study is prospective, but some points should be discussed.

First, it wasn't stated how the authors ruled out that the myasthenic crisis was triggered by something other than the statin [1]. Myasthenic crises are often triggered by infections (especially bacterial or viral pneumonias), medications (such as fluoroquinolones, macrolides, aminoglycosides, muscle relaxants, certain anticonvulsants, beta-blockers, and antiarrhythmics), changes in treatment (like stopping immunosuppressants suddenly, adjusting steroid doses, or missed doses of cholinesterase inhibitors), physical or psychological stress, pregnancy, menstrual cycle changes, or thyroid disorders [2]. Starting steroid therapy can also trigger myasthenic crises. How many patients had positive inflammatory markers at admission?

Secondly, it was not mentioned whether only patients with acetylcholine receptor antibody-positive myasthenia were included, or also patients with myasthenia due to antibodies against MUSK or LRP4. Also, it was not reported whether the antibody titers were elevated at the time of the myasthenic crises or remained unchanged compared to previous levels. It is crucial to know the antibody titers upon ICU admission, as their increase can document the occurrence of a myasthenic crisis.

Thirdly, it was not distinguished whether the need for mechanical ventilation was due to a cholinergic or a myasthenic crisis. Knowing whether the crisis was myasthenic or cholinergic is important because not only the treatment but also the course and outcome can differ significantly. A cholinergic crisis is characterized by miosis, while a myasthenic crisis is characterized by mydriasis.

Fourth, the current medications were not included in the analysis [1]. Since the type and dosage of immunosuppressants, pyridostigmine, and steroids can significantly affect the severity of the crisis as well as the speed of recovery, it is necessary to include these medications.

The fifth point is that statin myopathy was not considered as a cause of muscular respiratory failure [1]. Statin myopathy occurs in about one percent of patients [3], and since it was not an exclusion criterion, it is conceivable that in some patients, the respiratory insufficiency was due more to statin myopathy than to a myasthenic crisis. Was creatine kinase elevated in any of the 45 patients?

The sixth point is that the recruitment period also included the years of the pandemic [1]. Therefore, it would be interesting to know whether any of the patients recruited between 2020 and 2023 tested positive for SARS-CoV-2 and whether the infection triggered a worsening of myasthenia, as has been repeatedly reported [4].

Finally, the number of patients included is small, so the results should be interpreted with caution. To draw more general conclusions, it would be necessary to repeat the study with a larger patient group, more participating centers, and a prospective design.

Before blaming statins for triggering myasthenic crises, the cause-and-effect relationship needs to be confirmed in a larger sample, in multiple and not just a single center, in a prospective design, and the underlying pathophysiology needs to be explained.

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