Understanding infection risks in patients with myasthenia gravis

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Myasthenia gravis (MG) is a serious autoimmune neuromuscular disease. Immunosuppression or immunomodulating therapies are used to treat patients with MG but have the potential to suppress or alter the immune

system, with infections being one major risk.

Dr. Charles Kassardjian, a neurologist and researcher at St. Michael's Hospital, recently published the largest study on infection risk within the field of neuromuscular medicine. We caught up with Dr. Kassardjian about his research, published in the *European Journal of Neurology*, and why the findings are significant for physicians who treat patients with MG.

Why did you explore infection risks in patients with MG?

My academic focus is in quality improvement and patient safety, and so I have been interested for a while in the risks associated with immune therapy. Remarkably, there are almost no data from large cohorts to help guide discussions with patients about the risks of infection associated with treatment despite common use of immunosuppressants– so there was a huge gap in knowledge. Because of this gap, our research results are novel and exciting. These are serious risks that patients need to be aware of, and there are no guidelines specifically for neuromuscular disease to help clinicians gauge risk, or decide about preventative antibiotics.

What were your key findings?

About one third of the MG patient cohort developed a serious infection during the study period, compared to under 20 percent of the age and gender matched comparators. After adjusting for confounding variables, we found that patients with MG were at a 39 percent higher risk of developing a serious infection. The most common infections were respiratory—for example, pneumonia—but there were increased rates of skin infections, sepsis, post-operative infections, shingles and influenza,

among others.

Did anything about the findings surprise you?

I was surprised by the magnitude of the difference in the infection risk and breadth of types of infection. I was also surprised that more patients in the MG group did not develop PJP (a serious fungal pneumonia), since we are often taught that patients on chronic immunosuppression—especially prednisone at high doses for long periods—should be on antibiotics to prevent this infection.

Why is this research significant?

This research provides clinicians with real-world data to inform their patients of infection risks, and which infections are most likely. In addition, MG is a disease that is managed not only by neuromuscular specialists, but also general neurologists and internists, and of course with active involvement from family physicians. Therefore, the findings are of interest and applicable to a large audience of clinicians.

Although we did not study other diseases, the findings raise the possibility of higher infection risk in other autoimmune neurological diseases for which immunosuppression is used, and will hopefully spur further studies.

Finally, there are some important practical implications. For example, the higher rates of influenza and shingles in the MG group suggests that clinicians should consider vaccination for these entities in MG patients. I hope that data such as these are eventually used to create specialty-specific guidelines.

More information: C. D. Kassardjian et al. Serious infections in

patients with myasthenia gravis: population-based cohort study, *European Journal of Neurology* (2020). DOI: 10.1111/ene.14153