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Correspondence to Dr. Lockhart: snl@berkeley.edu

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Nicolas Molko, MD, PhD
Olivier Simon, MD
David Guyon, MD
Antoine Biron, PharmD
Myrielle Dupont-Rouzeyrol, PhD
Ann-Claire Gourinat, PharmD

ZIKA VIRUS INFECTION AND MYASTHENIA GRAVIS: REPORT OF 2 CASES

Zika virus (ZIKV) infection is known as a benign infection usually presenting as an influenza-like illness.[1] However, clusters of microcephaly cases and other neurologic disorders following ZIKV outbreaks in Brazil, as well as a cluster of Guillain-Barré syndrome following an outbreak in French Polynesia in 2014, constitute a Public Health Emergency of International Concern according to WHO.[2,3] An outbreak of ZIKV infection in New Caledonia occurred in 2014 with 1,380 confirmed cases within a population of 263,000.[4] We report 2 cases of myasthenia gravis (MG) with prior ZIKV infection.

Patient 1. A previously healthy 45-year-old man developed an influenza-like illness in February 2014, associated with headache, arthralgia, and severe asthenia for 1 week. Diagnosis of ZIKV infection was confirmed by real-time reverse-transcriptase PCR (RT-PCR) performed on serum.[5] Two and a half months later, the patient had fluctuating weakness of the limbs with areflexia and ptosis of the left eye. Sensory examination results were normal. A significant decrement of the trapezius muscle to repetitive nerve stimulation was found. Edrophonium test was negative. Acetylcholine receptor (AChR) antibodies were markedly elevated at 80 mmol/L (normal <0.2). CT scan of the mediastinum showed a 28 × 34 × 26 mm thymoma. The patient responded to initial treatment with pyridostigmine and IV immunoglobulins. He was then treated with prednisone and azathioprine and developed pharmacologic remission. Thymectomy was performed 6 months later after complete clinical remission and showed a grade I thymoma.

Patient 2. A 62-year-old man, with a history of colon cancer and benign thymoma in 2008, presented with fever, diarrhea, and dyspnea in May 2014 and was positive by RT-PCR for ZIKV performed on serum.[5] Two months later, he had a myasthenic crisis with generalized weakness and respiratory failure, requiring immediate respiratory assistance. Some weakness of voluntary muscles and diplopia were already present 1 week before admission to the intensive care unit (ICU). AChR antibodies were elevated at 80 mmol/L (normal <0.2). Repetitive nerve stimulation studies confirmed a defect in neuromuscular transmission. CT scan of the mediastinum showed a 40 × 55 × 46 mm thymoma of unchanged size compared to 2008. No clinical improvement was initially observed under pyridostigmine and IV immunoglobulins. Prolonged mechanical ventilation was associated with complications of ICU care (infections, cardiac arrhythmia, psoas hematoma). The patient improved slowly under IV methylprednisolone, and weaning from the mechanical ventilation was performed 1.5 months later. Symptoms of MG were then controlled on azathioprine and prednisone. Four months later, the patient experienced a mild relapse related to prednisone tapering. Pharmacologic remission occurred 6 months later. Thymectomy was performed 1.5 years later and showed a grade I thymoma.

Discussion. We report 2 cases of MG occurring 8–10 weeks after ZIKV infection. The presence of a thymoma in these 2 patients suggests a longstanding host predisposition to MG and is already a pathologic event. Whether ZIKV infection is coincidental, initiates MG, or provokes symptomatic disease in a previously unrecognized MG remains unknown. During ZIKV outbreaks, several autoimmune complications

(Guillain-Barré syndrome, thrombocytopenic purpura) have been described.[2,3] In this context and since MG is rare, the potential role of ZIKV infection as a trigger of MG should be investigated. The factors that initiate the autoimmune response in MG are unknown and may result from a mix of genetics, environmental factors, and stochastic events. Interestingly, after West Nile virus infection, a closely related flavivirus, 6 cases of MG have been reported 3–7 months after the infection, including 1 patient with a thymoma.[6] Since MG may mimic Guillain-Barré syndrome, clinicians should be aware of the putative risk of MG following ZIKV infection.

From Territorial Hospital (N.M., O.S., D.G.); and Institut Pasteur in New Caledonia (A.B., M.D.-R., A.-C.G.), Institut Pasteur International Network, Noumea, New Caledonia.

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Correspondence to Dr. Molko: n.molko@cht.nc

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