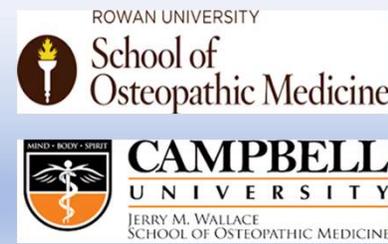




Pembrolizumab-associated myasthenia gravis with myositis in a patient with Merkel cell carcinoma

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Background

Pembrolizumab (Keytruda) is a PD-1 receptor inhibitor on lymphocytes, resulting in upregulation of immune response and preventing recognition of cancer cells.

In myasthenia gravis, antibodies attack postsynaptic receptors at the neuromuscular junction leading to muscle weakness.

While the etiology is often thought to be autoimmune, myasthenia gravis can be induced by certain medications.

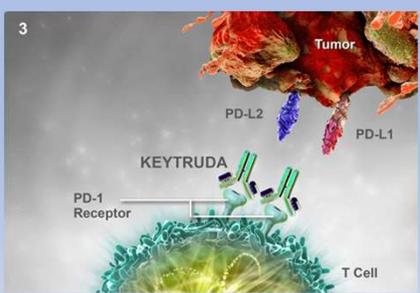
Case:

A 70-year-old male with past medical history of Merkel cell carcinoma, congestive heart failure, atrial fibrillation, hypertension, hypothyroidism, diabetes mellitus, chronic kidney disease presented to the ED for progressive generalized weakness over the course of three weeks.

He had been receiving pembrolizumab infusions for Merkel cell carcinoma. However, after two infusions, the patient developed weakness and was diagnosed with myasthenia gravis. He was also found to have myositis, likely due to pembrolizumab.

Patients with pembrolizumab-induced myositis are more likely to develop respiratory failure requiring mechanical ventilation.

Sepsis and/delay of plasmapheresis initiation may worsen outcomes in patients with pembrolizumab-associated myositis.



Course:

Pembrolizumab was immediately stopped. High dose steroids was initiated outpatient. Upon admission, IVIG and Pyridostigmine were initiated.

Progressively increasing generalized weakness resulting in hypoxic respiratory failure complicated by sepsis with positive *Micrococcus* and *Morganella*.

Plasmapheresis initiation was delayed by four days due to positive blood cultures.

Discussion:

This case demonstrates the potential for severe adverse outcomes associated with immunotherapy regimen pembrolizumab.

Recognition of widespread toxicities of pembrolizumab is crucial in early management.

Appropriate treatment with steroids, IVIG and/or plasmapheresis often leads to symptom resolution.

Comorbidities potentially contributed to this patient's progressive respiratory decline.

Treatment resistance or comorbidities may increase the risk of life-threatening outcomes in patients with drug-induced myositis or myasthenia gravis.