

A CASE REPORT OF GALCANEZUMAB-INDUCED MYASTENIA GRAVIS-LIKE SYMPTOMS

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Background. Over the past decade, new migraine treatments, blocking the calcitonin gene-related peptide (CGRP) pathway, have been approved and have demonstrated excellent efficacy and an optimal safety profile in both randomized controlled trials (RCTs) and real-world data (1,2). However, pharmacovigilance remains essential, especially for drugs that have been introduced so recently.

Methods. We present a clinical case of myasthenia gravis-like symptoms (MyG-l) during treatment with galcanezumab. A 52-year-old woman had suffered from migraine since adolescence, she had no other significant comorbidities; therefore, after failing several prophylactic medications, she began treatment with galcanezumab, achieving an optimal control of her migraine (3). Nevertheless, after 9 months of treatment, she developed right eyelid myoclonus, accompanied by fatigue during prolonged movements of her right hand, increased fatigue while walking, and occasional dysphagia with liquids. Myasthenia gravis was suspected, so several tests were performed. Both anti-acetylcholine receptor antibodies and anti-specific muscle kinase antibodies were negative. Laboratory workup, including thyroid function, was normal. A contrast-enhanced chest computed tomography (CT) scan revealed no abnormalities of the thymus. The brain magnetic resonance imaging (MRI) was normal; electroneurography (ENG), electromyography (EMG), repetitive nerve stimulation (RNS), and single-fiber electromyography (SFEMG) were negative. The patient was also prescribed an acetylcholinesterase inhibitor (pyridostigmine), without success. We ultimately decided to discontinue galcanezumab, and the patient reported a subjective improvement in her MyG-l, accompanied by a significant worsening of her migraine. The patient requested to resume treatment with galcanezumab, which led to the recurrence of MyG-l. We therefore decided to permanently discontinue the treatment and to try another preventive therapy.

Conclusions. Galcanezumab, fremanezumab, erenumab, and eptinezumab are monoclonal antibodies that target CGRP; gepants, on the other hand, are small molecules that target CGRP. All of these drugs are generally well tolerated, but postmarketing surveillance, as is well known, remains essential for identifying rare adverse events.Our case report is not the only one in the literature that suggests the onset of neuromuscular manifestations following the initiation of therapy with a CGRP antagonist or a CGRP-receptor (CGRPR) antagonist. Another case report of MyG-I following initiation of galcanezumab has been published (4), and there are also two case reports of MyG-I following initiation of erenumab (5,6).In our case, the positive results of both dechallenge and rechallenge are highly indicative of an adverse drug reaction (ADR). According to the Naranjo's ADR Probability Scale (7), we obtained a score of 8; therefore, this can be considered a probable ADR.Numerous studies have examined the role of CGRP at neuromuscular junctions; most of them have shown that CGRP modulates synaptic transmission by interacting with acetylcholine or its receptor (8), but these findings need to be confirmed, and certainly scientific data are necessary to verify whether anti-CGRP/CGRPR drugs can influence neuromuscular transmission.