



SUPPLEMENT

The role of vitamin D and fish oil supplementation in a critically ill myasthenia crisis patient: A case report

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Abstract

Background and objectives: Myasthenia gravis (MG) is a rare, chronic autoimmune disease with an incidence of 1.7-28 cases per 1,000,000 person-years. It can progress to myasthenic crisis (MC), a life-threatening complication characterized by respiratory failure. Most MC patients require mechanical ventilation (MV) and often have trouble during MV weaning. This case report aims to describe the potential role of vitamin D and fish oil supplementation in facilitating MV weaning in a patient with MC in the intensive care unit (ICU).

Case report: We present the case of a 22-year-old man with MC and respiratory distress, admitted to the ICU requiring MV. The patient had normal nutritional status with initial body mass index (BMI) 20.32 kg/m². He failed three MV weaning attempts. He subsequently underwent tracheostomy and received vitamin D and fish oil supplementation.

Results: During 22 days in the ICU, his energy intake ranged from 13-32 kcal/kg body weight/day, and his protein intake ranged from 0.4-1.6 g/kg body weight/day. Vitamin D supplementation was initiated on day 5, followed by fish oil on day 6. Fish oil, which contains eicosapentaenoic acid (EPA), may help preserve diaphragm strength with reduce calpain activation, while vitamin D supports muscle function and immune response, potentially enhancing diaphragm performance. The patient was successfully weaned from MV and discharged from the ICU on day 23.

Conclusion: Vitamin D and fish oil supplementation may support the MV weaning process in critically ill patients with MC.

Keywords: vitamin D, fish oil supplementation, myasthenia crisis, critically ill, mechanical ventilation weaning

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