Open Access

OBM Integrative and Complementary Medicine

LIDSEN Publishing Inc.

Case Report

Art of Telesupport of Caregiver during Myasthenia Gravis Crisis by COVID-19 Infection-Related Followed by Rescue in Late-Onset Patient

Corrado Angelini *

University of Padova, Padua, Italy; E-Mail: corrado.angelini@unipd.it

* **Correspondence:** Corrado Angelini; E-Mail: corrado.angelini@unipd.it

Academic Editor: Gerhard Litscher

Collection: Evidence-Based Integrative Medicine for Epidemics

OBM Integrative and Complementary Medicine
2024, volume 9, issue 2
doi:10.21926/obm.icm.2402035

Received: February 06, 2024
Accepted: June 11, 2024
Published: June 21, 2024

Abstract

An 83-year-old man with myasthenia gravis was hospitalized in the ICU; support for caregivers of elderly myasthenic patients in the ICU can be a crucial aspect of their care. Myasthenia gravis is a chronic autoimmune neuromuscular disease that can cause varying levels of muscle weakness, which can significantly impact the patient's day-to-day activities and overall quality of life. This intervention was followed for over one month with success. The critical phases are presented and analyzed as a medical support art.

Keywords

Myasthenia gravis; support; intensive care unit

1. Introduction

Myasthenia gravis (MG) is an autoimmune NMD that occurs when the body's immune system expresses AchR antibodies that, with complement, attack the receptors responsible for muscle contraction at the neuromuscular junction (NMJ). Late-onset MG refers to cases where the

symptoms develop after the age of 50 and have been increasing in older men recently.

The SARS-CoV-2 virus pandemic has raised concerns regarding its impact on individuals with pre-existing health conditions, including MG [1-3]. While research on the interaction between COVID-19 infection and NMJ in MG is limited, there have been reports suggesting an association between the two [4, 5].

It is believed that the systemic inflammation and immune response triggered by a COVID-19 infection can potentially worsen or precipitate MG symptoms.

2. Case Report

An 83-year-old man presented with 2 years of grade 2B myasthenia with diplopia and bulbar weakness; apart from elevated blood pressure, he had no history of other disorders. He has two daughters: one is affected by thyroiditis and was the tele-supported caregiver, and the other has rheumatoid arthritis. The search for an AChR antibody showed a mildly elevated title (2.5 Units). He underwent spirometry and CT for thymus that showed possible residual thymus, but on consultation, surgery was not advised. He has been treated with Pyridostigmine 60 mg three times daily with some improvement and alternatively day steroid regimen with prednisone 25 mg.

He underwent consultation with several specialists and, given the scarce response to treatment and unwillingness to increase steroids, was advised to do a few cycles of IVIg treatment, which he was able to obtain in a peripheral hospital, but he complained without much result. He refused to try azathioprine or other immunosuppressant therapy.

In December of 2023, his daughter contracted a COVID-19 infection because of traveling. He was not revaccinated and underwent, because of close contact, a sudden COVID-19 infection with severe difficulty breathing and swallowing.

On December 17, he was hospitalized for respiratory insufficiency and intubated in the Intensive Care Unit at Padova Hospital.

The unit where he was had separate beds for COVID-19-infected cases: Remedivir treatment was started, and Medrol 250 mg was given with an additional IVIg cycle.

The patient was able to raise his arm (MRC strength in upper extremity muscles and grip 4/5) but was weak in lower limbs (MRC 3/5). On December 23, an extubation was tried, but failed because of bulbar weakness and a concomitant concurrent respiratory infection with dense mucus.

After another week in the ICU, he became restless, so a second extubation was tried on January 2, 2024, which was successful.

Unfortunately, he presented atrial fibrillation that was treated with digitalis and amiodarone since initially, and he refused the cardioversion with propofol anesthesia.

On January 4, he accepted the cardioversion procedure, which was successful. He was then transferred to a semi-intensive respiratory unit and discharged from the ICU. A fortnight later, he was able to reach the home where telesupport to him and his caregiver was available.

3. Discussion

In this elderly MG patient, muscular weakness of the chest and diaphragm, weak airway clearance, lung infection, atrial fibrillation with cardiac involvement, steroid, and immunosuppressant treatment concurred to a relatively lengthy ICU occupation determining stress on caregiver, depression, irritability in the patient. Thus, it was difficult and challenging to give

caregiver support. We report a rather severe case with over a month of permanence in the ICU for respiratory distress after COVID-19 infection. He never developed pneumonia but was suspected of having bacterial and Aspergillus pulmonary/respiratory tract infections. He was markedly weak, although conscious throughout his intensive ICU stay.

Myasthenia gravis has been associated with higher mortality from COVID-19 compared to the general population.

Indeed, hypertension, older age, and immunosuppression are considered risk factors associated with COVID-19 severity in the NMD series.

However, in this acquired NMD patient, corticosteroid therapy was well tolerated as in other NMD forms with COVID-19 infection. A study performed on 15 cases of MG did not detect any additional problems. Kim et al. [6] conducted a retrospective study analysis in a series of MG cases. Primary outcomes, such as hospitalization, ventilator use, intensive care unit (ICU) admission, and death in COVID-19 patients with MG were compared with those of COVID-19 without MG: the groups of non-MG cases were those with rheumatoid arthritis, systemic lupus, and multiple sclerosis (MS). They concluded that older MG infected by COVID-19 and in general patients with MG are more likely to be admitted to the hospital and require ICU care. Optimal follow-up might allow the rescue of critical MG patients. In critical MG patients, and in generalized MG, therapy should be continuous during the COVID-19 pandemic [5, 6]. High rates of COVID-19 complications and death were observed in this cohort of MG patients.

The worsening of symptoms was observed in this patient with existing respiratory impairment, swallowing difficulty, and older age who has been classified "at high risk" for developing severe forms of COVID-19.

Cardiac involvement was an unexpected event that occurred after the second trial of extubation, not responsive to amiodarone or other medications for atrial fibrillation. The risk of deterioration with fever, fasting, or infection was immediately perceived by the patient and caregiver with deep frustration and depression.

This complex crisis of an MG patient was overcome by giving support to the caregiver, hope to the patient to survive, and correct medical decisions, but still, ultimately, only a direct intervention was needed to convince the reluctant and scared MG patient to agree to get the needed cardioversion for atrial fibrillation. The most frequent and common signs/concerns of MG include ptosis and diplopia; however, these do not represent a "red flag" and a warning alarm. On the other hand, the ICU was difficult to access because of the recent COVID-19 infection, and intubation precluded the evaluation of patient, since infection and intubation precluded evaluating bulbar features, although progress in this field is ongoing [7].

Patient and caregiver were given correct medical advice, clear guidelines, and emotional as well as continuous support, by telemedicine [8] a new art of medical practice.

A major hurdle in dealing with this patient was manifested signs of irritability and suspicion when cardioversion was needed. Thus, a lengthy period in ICU becomes in itself an anxiety-related event with emotional strain, one should realize that MG patients might have psychiatric disturbances [9]: tele support and guidance over the correct procedures to follow are the fastest way to resolve such a strain.

Author Contributions

The author did all the research work of this study.

Competing Interests

The author has declared that no competing interests exist.

References

1. Gagliardi D, Costamagna G, Abati E, Mauri E, Brusa R, Scudeller L, et al. Impact of COVID-19 on the quality of life of patients with neuromuscular disorders in the Lombardy area, Italy. Muscle Nerve. 2021; 64: 474-482.
2. Tseng YH, Chen TH. Care for patients with neuromuscular disorders in the COVID-19 pandemic era. Front Neurol. 2021; 12: 607790.
3. Angelini C, Siciliano G. Neuromuscular diseases and Covid-19: Advices from scientific societies and early observations in Italy. Eur J Transl Myol. 2020; 30: 9032.
4. Guidon AC, Amato AA. COVID-19 and neuromuscular disorders. Neurology. 2020; 94: 959-969.
5. Angelini C. Acquired neuromuscular disorders. Cham: Springer; 2022.
6. Suh J, Amato AA. Neuromuscular complications of coronavirus disease-19. Curr Opin Neurol. 2021; 34: 669-674.
7. Kim Y, Li X, Huang Y, Kim M, Shaibani A, Sheikh K, et al. COVID-19 outcomes in myasthenia gravis patients: Analysis from electronic health records in the United States. Front Neurol. 2022; 13: 802559.
8. Ricciardi D, Casagrande S, Iodice F, Orlando B, Trojsi F, Cirillo G, et al. Myasthenia gravis and telemedicine: A lesson from COVID-19 pandemic. Neurol Sci. 2021; 42: 4889-4892.
9. Magni G, Micaglio GF, Lalli R, Bejato L, Candeago MR, Merskey H, et al. Psychiatric disturbances associated with myasthenia gravis. Acta Psychiatr Scand. 1988; 77: 443-445.