Int. j. adv. multidisc. res. stud. 2026; 6(4):268-269

Received: 18-06-2026
Accepted: 28-06-2026

International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

Letter to the Editor

Retrospective Identification of Myasthenic Crises can Fail if Only ICD Codes are Used

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Letter to the Editor

The article by Garrido-Hernandez *et al*. [1] is forward-looking but some points should be discussed.

First, the study design is retrospective [1]. Retrospective studies have several disadvantages [2]. They are characterized by low data quality, missing data, the inability to demonstrate causality (only association), susceptibility to selection bias, difficulties in controlling for confounding variables, and a generally lower level of evidence compared to prospective studies [2]. Second, the recording of myasthenic crises using the ICD code system is highly questionable [1]. As the authors note, G71.01 does not necessarily signify a myasthenic crisis. An myasthenia gravis (MG) exacerbation may also mean that MG symptoms have recurred or worsened, and an adjustment of oral therapy was sufficient to resolve the problem. Even if ventilator-related ICD codes were found in connection with admission, this does not necessarily mean that a myasthenic crisis was the reason for admission to the intensive care unit. MG patients may require intensive care treatment for numerous other reasons. Similarly, the ICD codes do not reveal whether myasthenia gravis (MG) was actually the reason for admission to the emergency room or the general ward. The admission due to MG could have had other causes, yet the person received the code G70.0.

Third, the outcome of crises can depend heavily on whether they are cholinergic or myasthenic. However, no distinction was made between these two conditions. How many patients had a myasthenic crisis, and how many a cholinergic crisis? Myasthenic crises generally have a more severe course and higher mortality than cholinergic crises [3]. Before concluding that in-hospital mortality remained stable over the seven-year observation period, it is necessary to examine whether the ratio between cholinergic and myasthenic crises also remained stable during the study period.

Fourth, the study also covered the years 2020-2022, thus encompassing part of the COVID-19 pandemic. Were there differences in the reasons for admission and the course of the illness compared to the period before COVID-19 (2016–2019)? Since access to ICUs may have been limited during the pandemic, and hospitalizations were generally avoided unless absolutely necessary, it is conceivable that the number of admissions decreased during these three years, and that treatment outcomes and mortality worsened. To assess this aspect, a comparison of the period before and during the COVID-19 pandemic would be essential.

Fifth, the quality of outpatient MG care was not included in the analysis [1]. The rate of hospitalizations for MG patients is strongly dependent on the quality of outpatient care. The decrease in hospitalizations since 2018 could easily be explained by more regular and improved outpatient care.

Sixth, the rate of admissions may also depend on the effect, tolerability and type of MG therapy [4]. How many of the included patients received standard treatment, and how many received complement inhibitors or Tc-receptor antagonists? How many had undergone thymectomy, and how many had previously experienced myasthenic or cholinergic crises?

Finally, it should be reported whether the number of admissions, treatment success, and mortality differed between AchR-positive, MUSK-positive, and seronegative patients.

Declarations
Ethical Approval: Not applicable.

Consent to Participation: Not applicable.

Consent for Publication: Not applicable.

Funding: None received.

Data Sharing: Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

Completing Interests: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Contribution: JF was responsible for the design and conception, discussed available data with coauthors, wrote the first draft, and gave final approval. SM: contributed to literature search, discussion, correction, and final approval.

Acknowledgements: None.

Keywords: Myasthenia Gravis, Myasthenic Crisis, Population-Based, COVID-19, ICU

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