



## Letter to the Editor

**Letter to editors regarding the article “Predictive score for oral corticosteroid-induced initial worsening of seropositive generalized myasthenia gravis”**


## ARTICLE INFO

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Dear Editor,

I read the recent article by Kanai et al. [1] published in January 2019 issue of The Journal of Neurological Sciences entitled “Predictive score for oral corticosteroid-induced initial worsening of seropositive generalized myasthenia gravis”. The authors reported that the scoring system based on three clinical characteristics can predict the likelihood of steroid-induced initial worsening in MG. Despite careful analysis of this study, some methodological issues should be taken into account. In this study univariate and multivariate regression models were applied while the results of the univariate model were not reported. It was important since their comparisons could help the authors to decide on confounder selection and adjustment. They also decided to include variables based on the results of univariate model and Fisher Exact test to prevent model overfitting while significance level criteria for confounder identification was not determined clearly. Although this method is widely used, it arouses some controversies such as predictor overestimating especially in the small data sets. This phenomenon is called testimation bias. In fact, selection of variables based on significance level only allows strong predictors enter to the model and ignores the weaker ones. One remedy to reduce bias is to select variables with higher significance level, such as  $p < 0.20$  or  $p < 0.50$  [2]. In addition, I recommend the authors to apply other methods of confounder

identification such as directed acyclic graph (DAG) [3] as well.

**Conflict of interest statement**

None declared.

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**References**

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