

LETTER

Functional markers to predict the need for prolonged mechanical ventilation in patients with Guillain-Barré syndrome

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See related research by Fourier *et al.*, <http://ccforum.com/content/15/1/R65>

We read with great interest the article by Fourier and colleagues [1], who investigated functional markers to predict the need for prolonged mechanical ventilation (MV) in patients with Guillain-Barré syndrome (GBS) and acute respiratory failure. The study was well conducted, but we are concerned about the study design and the confounding factors.

Firstly, we want to know why the authors chose 15 days as a cutoff point of MV duration. As mentioned in the article, tracheotomy is indicated in GBS patients when a long duration of MV is expected [1]. Although the optimal time for performing tracheotomy is not well known, it is usually considered after 3 weeks of prolonged MV [2]. In this context, we are eager to know whether the lack of foot flexion ability was associated with a MV length of more than 21 days. If so, it might be used as a

predictor for tracheotomy. Secondly, the authors seem to equate MV with endotracheal MV in their research. We therefore want to ask whether the authors used non-invasive mask MV in patients at the very early stages of respiratory failure. Thirdly, delay between disease onset and admission or initiation of immunotherapy seems to differ among GBS patients. This may confound the data analysis since the predictive values of foot flexion ability may differ between patients beginning to receive immunotherapy from the recovery stage and from the acute stage [3]. Lastly, although immunotherapy can change the natural course of GBS, other factors may act in an opposite way. Complicated infections and electrolyte disorders [4] may aggravate respiratory muscle weakness and lead to prolonged use of MV.

Author's response

François Fourier and Laurent Robriquet

We thank Dr Zhang and colleagues for their comments on our article.

In our study, we mainly considered the 15 days cutoff point on a 'pragmatic' basis. In GBS patients, immunotherapy needs to be given for 5 to 7 days and the first signs of improvement are expected in the following 7 days. If at the end of immunotherapy a marker may predict a lack of improvement, waiting more time will delay tracheotomy needlessly and may result in a higher risk of complications. In agreement, presently published recommendations and experts' opinions mostly consider 10 to 15 days as the optimal delay for performing tracheotomy

[5,6]. Moreover, tracheotomy after 21 days might be associated with longer ICU stay and higher mortality [7].

Non-invasive mechanical ventilation (NIMV) was not used in our severe GBS patients. They are usually considered poor candidates for NIMV, being at very high risk of sudden respiratory arrest, aspiration, atelectasis, and cardiac troubles. Due to facial paresis, severe air leaks may limit efficacy and tolerance. Prolonged NIMV may provoke severe skin lesions and induce high care loads and monitoring needs [8].

None of our patients was treated from the recovery phase. The median delay between onset of the disease and ICU admission was 6 days, and all patients were given immunotherapy in the ICU soon after admission.

Finally, we completely agree that infection and electrolyte disorders should be aggressively treated. This is surely of great matter and refers to standard critical care. The best way to improve neurological status remains to shorten the course of the disease by early immunotherapy.

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Abbreviations

GBS, Guillain-Barré syndrome; MV, mechanical ventilation; NIMV, non-invasive mechanical ventilation.

Competing interests

The authors declare that they have no competing interests.

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