LETTER TO THE EDITOR

Dear Editor,

We would like to congratulate the authors of the study titled “Influence of peripheral muscle strength on the decannulation success rate”, recently published in this journal.\(^1\) This is a very relevant subject for those who care for chronic tracheotomy intensive care patients.

A number of studies in the literature are aimed at the identification of decannulation success or failure indicators and guidance for weaning chronic patients from the ventilator. Martin et al.\(^2\) have shown that chronically ventilated patients are weak and deconditioned and that admission upper-limb strength is inversely related to the time required for mechanical ventilation weaning. Both the findings from this study and those from Lima\(^1\) demonstrate the importance of establishing a specific training protocol for chronic ventilation tracheotomy patients.

To assess the impact of a rehabilitation program on successful weaning of tracheotomy patients from mechanical ventilation, Clini et al.\(^3\) conducted a prospective trial; 48 hours after admission to the intensive care unit (ICU), patients underwent peripheral muscle training schedules with daily increments, 6 days a week. Muscle training in this population was shown to increase the daily life activity score; this score is associated with survival and successful weaning. Notably, the lastissimus dorsi performance on Kendall’s test is an independent predictor of improved performance.

Importantly, the study is of an observational and retrospective nature, thus limiting standardized assessment of the variables and physiotherapy provided to each patient. In addition, the study fails to address the underlying disease, mentioning only comorbidities such as diabetes mellitus and sepsis. This fact may have influenced the decannulation failure rates. This is evidenced by the study by Mamary et al.,\(^4\) which assessed factors that influenced chronically ventilated patient outcomes. That study has shown that patients with chronic obstructive pulmonary disease (COPD) had an increased risk of failed weaning due to the limiting systemic conditions that are part of this disease process as well as the influence of the length of the ICU stay.

Therefore, longitudinal trials are warranted to assess these issues and to analyze their influence on the decannulation process. Once again, we highlight the relevance of the discussed study.

Sincerely,

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Influence of peripheral muscle strength on the decannulation success rate

Influência da força da musculatura periférica no sucesso da decanulação
REFERENCES


AUTHORS’ REPLY

Dear authors,

We thank you for the comments on the article titled “Influence of peripheral muscle strength on the decannulation success rate”, recently published in this journal.(1) We do agree that the study design (case control study) is disposed to bias and confounding factors as no clear event sequence, such as standardized physiotherapy care, is established.

Therefore, our understanding is that this subject should be better assessed by longitudinal trials, including larger patient samples, in order to provide better evidence for the association between peripheral muscle strength and the decanulation process. However, as this was a short-term and low-cost study, appropriate for small samples, it provides odds ratio results, which usually provide a good approximation to the relative risk for uncommon outcomes.

In this study, several diseases, including diabetes mellitus (DM) and septic complications of the underlying disease, led to the patients’ intensive care unit admissions and mechanical ventilation (MV). Although the causes leading to MV were not discussed in this study, no significant intergroup (success or failure) difference was identified during the sample characterization that could have had a direct influence on the decanulation procedure outcome.

The influence of DM and sepsis on the decanulation process was not described in the study report, but their pernicious effects on peripheral muscle structure as assessed by the Medical Research Council (MRC) proposed strength score are presented(2); these clinical conditions are considered risk factors for the paresis of critically ill patients. According to De Jonghe et al.(3), glycemic changes and sepsis are common during early critical disease phases and are frequently considered as risk factors for intensive care unit-acquired paresis. Van den Berghe et al.(4) suggest that maintaining normal glycemic levels can prevent and mitigate polyneuropathy among critically ill patients. Therefore, we believe that both factors can have a determinant impact on peripheral muscle strength and, consequently, may have contributed to the decanulation process outcome.

Therefore, we would like to thank you for your comments and reiterate that new studies are necessary for a better understanding of the influence of peripheral muscle strength on the outcome of the decanulation process.

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