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Letter to the Editor

Comment to the article: The value of inspiratory muscle training on poststroke sarcopenia and its effect on rehabilitation outcomes

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We read with interest the study by Zhao et al.[1] titled "*Value of inspiratory muscle training in poststroke sarcopenia and its effect on rehabilitation outcomes: A randomized controlled trial.*" However, we would like to offer some suggestions, particularly regarding the evaluation of sarcopenia.

Sarcopenia is a progressive and generalized skeletal muscle disease with significant consequences, such as falls, fractures, physical disability, and mortality. Low muscle strength, accompanied by low muscle quantity and quality, indicates sarcopenia.[2] There are diagnostic algorithms defined by many working groups such as the European Working Group on Sarcopenia in Older People, the International Society of Physical and Rehabilitation Medicine, and the Asian Working Group for Sarcopenia.[2-4] Stroke is an important cause of disability, and it has been shown that the number of motor units in the affected extremity decreases within hours after the development of stroke.[5,6] However, it may not always be possible to apply assessments such as grip strength, sit-to-stand tests, and walking speed in diagnostic algorithms to stroke patients. Grip strength measurement from the unaffected side or evaluation of lower extremity muscle strength can be used to monitor sarcopenia.[5,7] However, grip strength measurements from the nonparetic side may also be affected by the stroke and may not clearly indicate prestroke sarcopenia.[4] We believe that measuring quadriceps muscle thickness with ultrasonography, which is included in the diagnostic algorithm defined by the International Society of Physical and Rehabilitation Medicine,[3] may also be useful in monitoring.

In this study, the SARC-F questionnaire and calf circumference measurement were used as exclusion criteria to exclude prestroke sarcopenia. The SARC-F questionnaire is a sarcopenia screening test, and sarcopenia is diagnosed by proceeding to advanced stages in the algorithm.[2] In this study, the calf circumference of the unaffected side was measured as the next step. However, it was unclear how prestroke calf circumference was determined. If it was evaluated during the inclusion in the study, it is important to specify the day or week after the stroke when patients were included in the study. It was stated that measurements <34 cm in males and <33 cm in females were excluded as prestroke sarcopenia. However, in the baseline evaluations in Table 1, it is observed that the calf circumference measurements of the patients included in the study were below the cutoff value. Therefore, it is thought that the patient group that should be excluded was also included in the study. Inadequate nutrition, immobilization, spasticity, and motor reorganization can lead to sarcopenia in stroke patients.[5] Dysphagia was evaluated only in the initial evaluations. The lack of information on nutritional status and spasticity levels during follow-up also prevents us from knowing whether there were differences between the groups.

While information is provided in the methods section on how grip strength was assessed in the evaluation of sarcopenia, the results are not

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discussed in the tables and the results section. In addition, the numerical data and changes of calf circumference measurements are not given in the posttreatment evaluations. All these lead to a lack of clear understanding of the parameters related to sarcopenia.

In conclusion, we believe that exercises for respiratory muscles will contribute to rehabilitation and reduce the risks of pneumonia. However, we believe that it would not be appropriate to make inferences about the effect of these exercises on sarcopenia, as the authors did not provide the optimal conditions in the evaluations made for sarcopenia.

Data Sharing Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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