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LETTER TO THE EDITOR

Letter to the Editor concerning "The association of back muscle strength and sarcopenia-related parameters in the patients with spinal disorders" by Toyoda H, et al. (Eur Spine J; https://doi.org/10.1007/s00586-018-5858-8)

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Dear Editor,

In a recent article, Toyoda and colleagues reported that there was a high prevalence of sarcopenia and dynapenia in patients with spinal disorders, and back muscle strength was significantly correlated with sarcopenia-related parameters [1]. The findings are particularly important as to the best of our knowledge, and this paper is the first to study the prevalence and predictive value of sarcopenia in accordance with the AWGS guidelines and the EWGSOP consensus in this population. Nevertheless, some methodological concerns need to be acknowledged for bioimpedance analysis (BIA).

First, although BIA may be a practical and cost-effective tool for daily practice to measure whole body and segmental body compositions, such methods must be used with caution to avoid miscalculations. BIA relies on measurement of electrical energy conduction capacity of hydrated tissues of body, which makes the results sensitive to the total body water changes [2]. So, a pretest preparation is essential to minimize the variations among the enrollees concerning the total body water changes. Emptying bladder immediately before the test, restrictions in food, alcohol or beverage intake at least for 4 h, performing the test at the same time period of the day and avoiding medications which can affect water distribution in the body are some of the important aspects of the pretest preparation [3, 4]. Toyoda et al. included only the subjects aged 65 years or older. These individuals frequently have several chronic diseases like hypertension and heart failure and require multiple medications with hemodynamic effects especially diuretics and antidiabetics. Within the methods and reported data, there is no clear information regarding these issues in the currents article.

Second, Toyoda and colleagues used the Tanita MC-980A Body Composition Analyzer (Tanita, Tokyo, Japan) for body composition analyses. Validation study of Tanita MC-980A Body Composition Analyzer (Tanita, Tokyo, Japan) which was referenced in the current study was performed by dual-energy X-ray absorptiometry (DXA) [5]. The magnetic resonance imaging, computed tomography and a four-compartment model are currently accepted gold standard tools to measure muscle mass, whereas DXA is not [6]. Validation studies that are not performed by gold standard methods for muscle mass are open to misidentifications related to estimation errors of the references. In addition to the missing methods, Pietrobelli et al. [7] reported that BIA tended to overestimate free fat muscle in the trunk in Japanese adults.

Author's contributions Dr. Vildan Binay Safer and Dr. İlker Tasci drafted the letter, and Dr. Umut Safer made critical review of the article.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interests.

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