



Commentary

Comment on “Comparison of the value of malnutrition and sarcopenia for predicting mortality in hospitalized old adults over 80 years”

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Dear Editor,

We read with interest the study by Jun Tao et al., in which they aimed to compare the prognostic value of malnutrition and sarcopenia for mortality in old adults over 80 years (Tao et al., 2020). In the study, they found when malnutrition and sarcopenia were compared together in a longitude cohort, malnutrition was an independent risk factor for mortality, while sarcopenia was not. It was also found that the coexistence of malnutrition and sarcopenia showed a synergistically accumulated risk for death (Tao et al., 2020). These results make valuable contributions to the literature, but some issues should be considered when determining sarcopenic older adults.

Jun Tao et al. used only low muscle strength and low muscle quantity criteria when diagnosing sarcopenia in this study and could not evaluate the low physical performance status, which indicates severe sarcopenia and may be more strongly associated with mortality (Tao et al., 2020). Moreover, they used cut-offs of 16 kg in women and 27 kg in hand grip strength determined by EWGSOP2 for low muscle strength; however, they evaluated the low muscle quantity with calf circumference (CC) and accepted under 31 cm for the cut-off (Tao et al., 2020; Cruz-Jentoft et al., 2019). Although EWGSOP2 mentions that CC can be used in cases where it is not possible to measure muscle mass by other methods, there is no evidence that CC can be an indicator for muscle mass or sarcopenia in the source shown (the study of Landi et al.) (Landi et al., 2014). Landi et al. showed that CC may be positively related to lower frailty index and higher functional performance among community-dwelling older people; however, Landi et al. claimed in this study that Rolland et al. found that CC's being below 31 was cut-off for lower muscle mass (Landi et al., 2014). However, when Rolland's study was examined, it was determined that CC was correlated with appendicular skeletal muscle mass, but CC could not be used as predictor for sarcopenia determined by DEXA (Rolland et al., 2003). In Rolland's study, it was concluded that CC below 31 cm may be associated with more muscle-related disability and physical function (Rolland et al., 2003). Therefore, the use of CC for low muscle mass by Jun Tao et al. may cause inaccuracies in diagnosing sarcopenia.

Another important point is that cut-offs can change according to the society and gender. For example, a study in Japan suggested cut-off values of CC for predicting low muscle mass are < 34 cm in men (sensitivity 89%, specificity 88%) and < 33 cm in women (sensitivity 78%, specificity 72%) (Kawakami et al., 2015). For this reason, Jun Tao et al. should have used China and gender-specific (perhaps higher) cut-offs, not 31 cm for CC in their work; thus, patients who were thought to be non-sarcopenic but actually had sarcopenia would have been caught.

Finally, not only low but also high CC may be important for sarcopenia, because one of the problems that increase with age is sarcopenic obesity. Indeed, a high CC in populations with elevated frequency of obesity could be a marker of sarcopenic obesity (Pérez-Zepedaa and Gutiérrez-Robledo, 2016). In the study where Pérez-Zepedaa et al. included 745 older adults over 60 years of age, it was shown that CC over 38 cm may be an indicator of disability and predict sarcopenic obesity (Pérez-Zepedaa and Gutiérrez-Robledo, 2016). In the study of Jun Tao, it is thought that sarcopenic obesity was neglected since 31 cm was taken as a cut-off for CC. Moreover, since sarcopenic obesity can also lead to cardiovascular and metabolic problems, it may be associated with far more mortality than sarcopenia (Atkins and Goya Wannamathee, 2020).

Consequently, for all these reasons, the study of Jun Tao et al. may not have identified a “true” relationship between sarcopenia and mortality, since some of the older adults who were sarcopenic could not be detected. The low muscle mass and low muscle strength required for the diagnosis of sarcopenia may have different cut-off values according to societies and genders, which may cause inaccuracies in the study results.

Declaration of competing interest

No.

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