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LETTER TO THE EDITOR

Sarcopenia definition in patients with NAFLD

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To the Editor:

I was interested in the article by Mizuno et al. [1] published in the Journal of Gastroenterology. The interaction between skeletal muscle mass and nonalcoholic fatty liver disease (NAFLD) is clinically important. However, some issues should be considered.

The authors mentioned that skeletal muscle mass index (SMI) was not associated with liver histology in their study. Compared to the previous studies by Lee et al. [2] and Koo et al. [3], the prevalence of low SMI and the relationship between SMI and hepatic fibrosis also differed. Despite the differences in the population and definition of NAFLD in these studies, I thought that the pivotal source of diversity was the definition of sarcopenia. Koo et al. [3] calculated the muscle index of sarcopenia as the appendicular skeletal muscle mass divided by body weight. Lee et al. [2] calculated the muscle index of sarcopenia as the appendicular skeletal muscle mass divided by body mass index (BMI). However, Mizuno et al. [1] defined sarcopenia using the muscle index of skeletal muscle mass divided by height^2. In our previous study [4], we compared the association between sarcopenia defined by difference muscle indexes and NAFLD in the same population. The results were distinct with each definition. This might provide some useful information regarding the heterogeneity of these studies.

In addition, the authors concluded that SMI decreased in participants with NAFLD. In other words, we would expect that when markers of NAFLD such as liver function improve, the SMI might increase. However, after nutrition and exercise intervention, SMI and BMI were significantly decreased at 12-month follow-up. Therefore, the key role for liver function improvement might not be low SMI alone but instead be an increase in the SF ratio (the ratio of skeletal muscle mass index to body fat mass index).

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Compliance with ethical standards

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