Review of: "Comparison of revised EWGSOP2 criteria of sarcopenia in patients with cancer using different parameters of muscle mass"

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Aging is progressing worldwide. As cancer increasingly occurs with age, cancer deaths are also increasing worldwide. In such situations, not only primary but also secondary sarcopenia has attracted more attention than ever before. Skeletal muscle mass measurement is imperative for sarcopenia diagnosis. The European Working Group on Sarcopenia in Older People 2 (EWGSOP2) and the Asian Working Group for Sarcopenia 2019 (AWGS 2019) guidelines recommend that skeletal muscle mass is measured using dual-energy X-ray absorptiometry (DXA) or bioelectrical impedance analysis (BIA). Alternatively, measurement is done using the computed tomography (CT) with dedicated software. However, the equipment for these measurements is highly expensive and needs a specific space. Therefore, a simple, easy, and economical measurement is necessary, when sophisticated and expensive tools are unavailable. Calf circumference (CC) measurement is a useful alternative to screen and diagnose sarcopenia in real-world clinical practice. This original research arouses interest for readers and provides an important clue in sarcopenia diagnose, especially in clinical settings, where sophisticated and dedicated instruments are unavailable.

1. Authors frequently referred to the EWGSOP2 guidelines (https://academic.oup.com/ageing/article/48/1/16/5126243). EWGSOP2 specified cut-off points for skeletal muscle mass measurements using DXA or BIA: appendicular skeletal muscle mass (ASM) <20 kg and <15 kg for men and women, respectively; and ASM divided by height squared, <7.0 kg/m^2 and <5.5 kg/m^2, respectively. However, EWGSOP2 did not provide recommendations for cut-off points for skeletal muscle index (SMI), as calculated by the total cross-sectional area (at the L3 level on the CT scan) divided by height squared. Moreover, references cited on SMI for sarcopenia diagnosis differ between this study (https://cebp.aacrjournals.org/content/26/7/1008.long) and the EWGSOP2 guidelines (https://www.nature.com/articles/s41430-017-0034-5; and https://www.nature.com/articles/s41598-018-29825-5).

The authors only used the handgrip strength cut-off values among the EWGPOS2 criteria. Therefore, we do not know whether the CT- or CC-diagnosed sarcopenia was identical to the EWGSOP2-diagnosed sarcopenia. At least, descriptions in the “Definition of sarcopenia” subsection may be misleading to the readers. Furthermore, the authors defined “sarcopenia by low muscle mass (MM)” as low handgrip strength

plus reduced MM assessed using CT (including low MM quality [CT-sarcopenia] and/or quantity). However, we do not know the number of patients with “sarcopenia by low MM” diagnosed by quality alone, quantity alone, or both. At least, sarcopenia by low MM diagnosed using the quality alone (CT-sarcopenia) differs from that diagnosed by the EWGSOP2 criteria.

2. Given that clinical characteristics of patients with cancer vary and are very heterogeneous according to the tumor type and stage and treatment modality, this study included a relatively small number of participants.

Authors stated that “All eligible patients were asked about their interest in participating in the study by trained researchers,” in the Procedure section and that “A total of 208 patients were interviewed, but 21 were unable to have their CC assessed due to leg edema or amputation. After the interview, the CT image was inaccessible for analysis in 79 patients (CT exams were older than 30 days),” in the Results section. Approximately half of the eligible patients were excluded from this study, which was too many. What did the authors examine or interview the patients for? Patients with leg edema or amputated leg and when a CT scan was performed are easy to notice by physicians. Therefore, 21 patients with leg edema or amputation and 79 patients who underwent CT more than 30 days ago did not need to be interviewed from the beginning or excluded after the interview.

3. As mentioned above, the sarcopenia criteria used in this study were different from the EGWSOP2 criteria. Thus, using the term “EGWSOP2 criteria” is inappropriate in the Results section.

The prevalence of sarcopenia by low MM using the CT scan was 24.1% and using SMI was also 24.1%. If these two subpopulations were equal, all the patients with low MM (measured by CT scan or SMI) would have low handgrip strength, i.e., sarcopenia. Is this interpretation correct?

CC was weakly or moderately correlated with SMI, whereas CC was constantly and more strongly correlated with total MM. The difference between SMI and MM is whether they are divided by height squared. The strength of the correlation may be due to this difference. How was the correlation between CC divided by height squared and total MM or between SMI and total MM?