Review of: "The SARC-F is a useful screening tool for detecting primary sarcopenia but not disease-related sarcopenia in ageing polio survivors"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

Thank you for giving me the opportunity to review this manuscript, that the study is interesting and planned in a special group of patients. Authors examined the utility of the SARC-F to predict sarcopenia, according to EWGSOP2 criteria in polio-survivors, with matched healthy controls. The authors concluded the study with a total of 42 patients, including 30 polio survivors and 12 control participants. The relatively small sample size of the study population is also one of the main limitations of the study. The hypothesis is noticeable, but there are some conflicting and confusing issues in the presentation and interpretation of the data even including the title. First noticed, in each section where the purpose of the study is emphasized, it would be better to state the aim in a more clear, understandable way in line with the hypothesis. The second, again in relevant sections, it is not clear that the hypothesis is supported or not supported according to findings of the study.

I have some recommendations that the authors may consider;

1.Title should focus more on hypothesis and study content.

2. Abstract

I understand that the aim of the study was to evaluate the usefulness of SARC-F for assessment of risk of sarcopenia in polio survivors not in healty older adults. The aim should be presented more precise. It is difficult to understand, why it is stated in the method section that sarcopenia assessment tools were used for distinguishing between those with primary sarcopenia and polio-related sarcopenia, and what authors mean by the distinction between primary sarcopenia and polio-related sarcopenia in scope of this study. In the result section, it is not specified whether the data associated with SARC-F reflects the entire population or the polio group. The authors stated in the conclusion that SARC-F can discern between primary and secondary sarcopenia as above mentioned.However, this statement is not supported neither within the scope of this study nor within the literatüre. It has been shown in previous studies that the sensitivity of SARC-F in predicting the risk of sarcopenia is low-moderate and the specificity is high. The risk of both primary sarcopenia and disease-related secondary sarcopenia can be predicted by the help of SARC-F questionnaire, with varying percentages of sensitivity and specificity (in vivo, 2021, doi: 10.21873/invivo.12595). Moreover, the ability of SARC-F to distinguish between primary and secondary sarcopenia may sound a bit speculative. The authors concluded that for polio-related sarcopenia (i.e. significant muscular asymmetry), the SARC-F as a screening tool is not suitable. Whereas, this inference is inconsistent with the results of the study. According to results, the SARC-F score was significantly higher in polio survivors than in the controls (2.6 vs 0.2, respectively, p=0.015) and predictive capacity of SARC-F according to ESWGOP-2 was moderate to high (Sensitivity:0.75, Specificity:0.77). In addition there was a significant negative

correlation between SARC-F and MNA (Figure S2) that reveals the close relationship of higher SARC-F scores with an unfavorable outcome. From all these data, it appears that SARC-F works well in predicting the risk of polio-associated sarcopenia.

3.Methods

More detailed information should be given about the recruitment to the study for both polio-survivors and healthy group and also inclusion criteria applied to the healthy group should be specified.

A multi-frequency body composition analyzer was used to evaluate muscle quantity and muscle mass was estimated with the Janssen equation and muscle mass measurement was made by placing electrodes on 5 segments, including the trunk. In this case, I understand that total skeletal muscle mass was measured, and may be more accurate to express the measured muscle mass as skeletal muscle mass (SMM) not as appendicular muscle mass (ASM) (Journal of Cachexia, Sarcopenia and Muscle 2017, DOI: 10.1002/jcsm.12159, Journal of Parenteral and Enteral Nutrition 2019, DOI: 10.1002/jpen.1742, Archives of Gerontology and Geriatrics,2019, DOI: 10.1016/j.archger.2018.10.010).

4.Results

The main answers to the hypothesis of this study are given in Table S2. However, the data related to Table S2 is not mentioned in the result section. It would be better to include Table S2 in the manuscript, not as supplementary material. In addition, detailed information about Table S2 should be given in the result section.

It should be stated which group figure 2 represents, polio group or total study population.

5.Discussion

First of all, the authors should present their findings and make a discussion in the light of the literature. The findings of this study were not adequately presented in the result section, nor were sufficiently discussed in the discussion section.

At the beginning of the discussion, the authors again mentioned the distinction ability of SARC-F in evaluating primary and secondary sarcopenia and emphasized that SARC-F is more effective in detecting primary sarcopenia than secondary sarcopenia. If so, authors are required to expand the discussion of these statements and cite reference.

Authors mentioned that, the combination of SARC-F with limb circumference or hand grip strength measurement appear effective and practical in predicting the risk of sarcopenia. However, such a combination measurement data was not used in this study and there is no data supporting the effectiveness of SARC-F plus limb circumference in assessing the risk of sarcopenia in polio-survivors. The authors may expand the scope of the study by analyzing these combinations with their own existing data.

The authors interpreted that they did not encounter low muscle mass as much as expected in polio patients, since the measurement made with BIA measures total muscle, not segmental, and this may be due to compensatory hypertrophy of the unaffected limb. It is a truly impressive finding. In this case, mentioning three points may be more enlightening for the presentation of the study. First of all, it is not clear in the article whether the authors made the limb measurement in the control group. The limb measurements of the control group and the measurements of the unaffected limb of the polio-survivors can be compared, that is, the limb measurements of the control group can be added to Figure 4 as the third measurement. Secondly, the device used by the authors for muscle measurement in the study seems to be a device with segmental measurement capacity. If the authors have raw segmental measurement data, the scope of the study can be expanded, and thirdly, the skeletal muscle mass indexes of the control group and polio survivors should also be

presented comparatively. Similar to these findings, it was reported that the skeletal muscle mass of Parkinson's patients was not inferior to controls despite lower muscle strenght, which was explained by disease characteristics like rigidity and tremor, and SARC-F was more closely associated with disability than low muscle mass (Neurological Sciences, 2019, doi: 10.1007/s10072-019-04073-1).