Reviewer’s report

Title: Assessment of peripheral muscle thickness and architecture in healthy volunteers using hand-held ultrasound devices; a comparison study with standard ultrasound

Version: 0 Date: 28 May 2019

Reviewer: Alice Sabatino

Reviewer’s report:

In the present study, authors were testing if a handheld ultrasound was valid for muscle mass evaluation in healthy volunteers. The paper is well written and the methods are clear, however I have some comments.

1. Throughout the paper authors discuss the use of ultrasound in critically ill patients, however, their study was performed in male healthy young volunteers, those are two very different populations and you can't extrapolate your results to critically ill patients. You could perform the same study in critically ill patients, or discuss the evidence available in your population of study.

2. You mentioned the use of bland-altman plots in the methods, however you didn't put them in the results.

3. How did you decide the sample size? Please add information regarding sample size calculation.

4. Background line 9: The techniques for assessment of peripheral muscle size and architecture are well established in many settings, not only healthy subjects or ICU, but also in the chronic outpatient care and rehabilitation. Since this is not a paper regarding the critically ill, you could mention the other references available in different clinical settings (ESRD, BPCO, coronary artery disease)

5. Nowadays, regular ultrasound machines are available in many clinical settings and are very portable, which advantage a handheld device brings?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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