Author's response to reviews

Title: Effects of home-based resistance training and neuromuscular electrical stimulation in knee osteoarthritis: a randomized controlled trial

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Author's response to reviews: see over
Dear BMC Musculoskeletal Disorders

Many thanks to the two peer reviewers for their valuable feedback.

We have addressed each point raised and hereby submit our amendments. I hope these meet your satisfaction.

Dr Nicolas Place’s points

1) Detailed information is now provided regarding the Resistance Training protocol (pg 5-6)

2) Similarly more information is now provided on the NMES protocol, such as subject position and knee angle (pg 8). In the Discussion section (pg 18) we report that all subjects reached motor threshold throughout the training program.

3) We have clarified that a maximally tolerated stimulus was used for NMES training (pg 8).

4) We have provided references on the validity and reliability of the functional tests in the OA population (pg 18).

5) We did perform a repeated measures ANOVA to test for main effects of group assignment over time (weeks 1, 8 and 14). We have merged Tables 2 and 3 as advised (pg 28). The sample size for statistical analysis was n=10,n=10,n=6.

6) We have provided possible explanations for our findings that functional improvements were not associated with muscular strength gains (pg 17).

7) We agree that the absence of change in quadriceps muscle force is surprising and difficult to explain given the increase in muscle CSA. We now acknowledge this and have done our best to provide possible explanations (pg 19).
8) We have acknowledged the absence of measurements of voluntary activation such as electromyography or twitch interpolation in our study, and the limitations in therefore interpreting our results (pg 17).

Dr Marco Alessandro Minetto’s points

1) We have changed CSA to “cross sectional area of the QFM” (pg 2) as advised.
2) We have changed the sentence at the end of pg 7 to “vasti and rectus femoris muscles” as advised.
3) Unfortunately we are unable to report the average values of stimulation intensity for the first and last week of NMES training. However we did add a sentence in this regard on pg 17: “Qualitatively, patients in the current study reported an ability to increase the training intensities significantly after the first few days of training, with slower gains thereafter. This is in keeping with well-reported tolerance or accommodation to NMES [8, 20].”
4) It would indeed be interesting to analyse changes in the different components of the quadriceps muscles on our MRI images but unfortunately this is not currently feasible because of resource constraints. We have added a paragraph at the bottom of pg 19 suggesting this for future work.
5) We have corrected the unit of measurement of peak torque in Table 2.

Many thanks.

Yours sincerely

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