Reviewer’s report

Title: THE EFFECT OF LOW LEVEL LASER IRRADIATION ON OXIDATIVE STRESS, MUSCLE DAMAGE AND FUNCTION FOLLOWING NEUROMUSCULAR ELECTRICAL STIMULATION. A DOUBLE BLIND, CROSS-OVER TRIAL

Version: 1 Date: 21 Jun 2019

Reviewer: John Dixon

Reviewer's report:

I thank the authors for submitting this manuscript which I enjoyed reading and which contains some very interesting data. The manuscript is generally written in a very clear and informative manner. However I have some comments, generally about clarity of results and inferences made.

ABSTRACT:

This was nicely written and clear. Perhaps you could clearly articulate the aim here.

BACKGROUND:

This is written in a very clear and logical manner. It summarises the rationale and the findings of previous studies that have examined the topic, and clarifies the gap in knowledge being addressed.

P 3 para 1 could the authors state briefly what the presumed underlying mechanism is by which LLLT produces potential benefits.

My only other comments in this section would be purely stylistic; to change "objective" to "aim" (p3 l 75); to move the last paragraph/sentence (p3 L85) which sits somewhat in isolation, and place it in the previous paragraph with the aim/objective.

METHODS:

Again this is very clear and logical overall.

P 4 Participant section: Sample size - please could you just clarify what the required size actually was, and what parameters fed into that, where appropriate (e.g. power, alpha, detectable difference) for anyone such as myself used to more "traditional" estimations of sample size. The fig 1 contains 30 enrolled and 24 randomised.

I am unclear on why SE is used for descriptive data (see below).
RESULTS/DISCUSSION

It is stated that results are presented as means and SEs. Variability for descriptive data should always be presented using SDs. Please could you amend that. A number of papers present the rationale for this such as: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3487226/

P 7 results 1st para (L217): please clarify which phase is A and which is B.

Intensity/MVC (L216) : this para should be written more clearly. There is a mix of %MVC, and reference to Fig 3 which is in Nm. It does not look, as presented, that the sham "decrease in MVC…..seen throughout the recovery period" stated in the text, matches the data in Fig 3. Perhaps this is just a lack of clarity in the wording of "throughout", but it seems to increase between 0 and 24 hours.

Please could you clarify for the non-statistician or non-crossover expert, how/why there is a marked baseline between-group difference in MVC (fig 3) in a crossover study when it is the same subjects acting as their own control. Perhaps this just needs some minor rewording but it looks like the baseline difference between groups is bigger than any post-treatment group difference. If that is true, please clarify what is means.

Soreness (L230): change "insignificant" to "not statistically significant" if that is what is inferred.

Broadly I think the textual results could be presented more clearly. It seems difficult for the clinical reader to assess and understand the results as written. Could this be improved?

DISCUSSION

To help the reader, I suggest start this section with a summary of the main findings. Currently it starts with a discussion of the level of stimulation.

Overall this reads well but my comments above re the Results need taking into consideration.

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.
Unable to assess

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 recommend additional statistical review

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

Acceptable

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