Author's response to reviews

Title:A personalized, intense physical rehabilitation program improves walking in people with multiple sclerosis presenting with different levels of disability. A retrospective cohort.

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Author's response to reviews: see over
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Professor Carlo Pozzilli
Editor
BMC Neurology

Re: MS: 1222724004153484
A personalized, intense physical rehabilitation program improves walking in people with multiple sclerosis presenting with different levels of disability. A retrospective cohort.

Dear Prof Pozzilli,

Thank you for providing the reviewers' comments.

I have responded to their comments on a point-by-point basis and highlighted the revised sections.

I agree that the advice given by the reviewers significantly impacts our work.

I hope that our paper is now suitable for publication.

Sincerely yours,

Alon Kalron, PhD
Reviewer 1

1. The comparison of pre/post testing by t-test is rather trivial. I would suggest to re-analyze the data to identify predictors of treatment response, e.g. age, gender, EDSS Functional systems, baseline performance and others. One could discuss multivariate linear models with change as outcome or a treatment response as defined by previously published benchmarks or relative changes.

We thank the reviewer for this advice. Accordingly, we performed a multivariate regression model for the long walking test. Generally, the analysis reinforces our previous findings, indicating that patients with moderate-severe impairment benefit highly from the intense rehabilitation program.

Detailed on:
Page 12, Para 3, Line 1-6.
Page 14, Para 2, Line 5-6.

2. Mood and fatigue might have major effects on the performance of clinical gait tests. I wonder if any standardized assessments addressing QoL, mood or fatigue are available and could be included in analyses. At least FS Cognition scores should be investigated.

Information added to Table 2.
Clarified – Page 8, Para 1, Line 1-6.

3. The authors state that "Protocols of all sessions were stored in the computerized data system." Are there any information of training intensity, motivation or adherence available for analysis?


4. Abstract: The number of patients in the database is misleading as less than 10% of the patients are included in the study. The number should be deleted and only appear in the method section.


5. The lack of findings in 10m/20m Walk and TUG might be due to the missing sensitivity of the tests to detect short term improvements. This should be added to the discussion.

Clarified – Page 14, Para 1, Line 5-7.

6. Rehabilitation is considered to have long term effect on physical activity. Results show already an improvement after 3 weeks of training - this is an important message and should be mentioned in the discussion.

Information added – Page 15, Para 2-3
7. Abstract: The improvements of the 2 MWT should be mentioned in brackets after the group. The current wording gives the impression of the largest improvement within the mild disabled group.

Clarified – Abstract, Results, Line 5-6.

Reviewer 2

1) The authors state their MS centre provides long-term multidisciplinary care and treatment but do not specify whether the patients perform other treatments besides the physical rehabilitation. This is an important point and should be explained more clearly.

Clarified – Page 8, Para 1, Line 1-7.

2) As mentioned by the authors themselves, other important measures, such as fatigue and spasticity evaluations, are lacking.

Clarified – Page, 16, Para 1, Line 1.

3) It is not clear how the authors measured, with statistical analyses, the best improvement in the moderate and severe groups with the 2-minute walk test (lines 227-228 and 244-245)

Statistical analysis section was revised and clarified – Page 10, Para 2-3.

4) The mild patients obtain the best walking measure scores before treatment; I think there may have been a ceiling effect after the treatment, and this should be discussed.

Clarified – Page 14, Para 1, Line 5-7.

5) The diagnostic MS criteria used should be updated (references n 28) and included in the Methods session.

Reference 28 updated.

6) To further improve the paper, it might be interesting to verify if predictive factors exist for the walking improvement

We addressed this recommendation on:
Page 12, Para 3, Line 1-6.
Page 14, Para 2, Line 5-6.
7) Line 121: EDSS score from 5.0 to 9.5 does not only reveal impairment in DE ambulation. Please specify better.

Clarified – Page 6, Para 2, Line 9-12.

8) Line 198: It is necessary to define the results of the test.


9) Figure 2: the results have to be shown as negative In the results and in the tables, I suggest inserting the type of statistical analysis performed.

Results of the TUG Test were changed to negative values in Figure 2 and Table 2.