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Benefits of Adapted Physical Activity (APA) in a cohort of Multiple Sclerosis patients: preliminary results of Perugia's group experience.

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INTRODUCTION

Multiple sclerosis (MS) is a chronic neurological disease affecting young adults, with a high risk of long-term disability, involving different functional systems with a progressive reduction in quality of life. Moreover, MS patients frequently experience fatigue and difficulty in walking. There is increasing evidence that Adapted Physical Activity (APA), a non-pharmacological treatment, can induce long-term benefits in MS patients.

AIM OF THE STUDY

This preliminary study was aimed to define the efficacy on fatigue and on walking of APA in MS patients. In particular, the effectiveness of a land-based training program alone was compared to its association with aquatic gym exercises.

PATIENTS AND METHODS

Twenty-one MS patients (Table1a) were included in a 32 weeks-exercise program. The APA protocol included two training sessions per-week, lasting one hour. Patients were divided in 2 groups (Table 1b): group A (land-based training once weekly) and group B (land-based and aquatic training). During both activities, patients performed stretching and strengthening exercises, to reduce muscular stiffness and improve postural stabilization. At baseline and after 32 weeks of training, Modified Fatigue Impact Scale (MFIS), Timed up and Go test (TUG) and Ambulation Index (AI) were performed.

Table 1: Features of MS patients

Patients	21 (F 14)	
MS phenotypes	RR-MS SP-MS PP-MS	11/21 (52,4%) 7/21 (33,3%) 3/21 (14,3%)

(1a)

	Group A	Group B
Patients	10 (F 6)	11 (F 8)
Age	45± 10	48,5 ± 11
EDSS	4,2 ±1,8	3,8±1,7
MS phenotypes	RR-MS 5/10 (50%) SP-MS 3/10 (30%) PP-RS 2/10 (20%)	RR-MS 5/11(45,4%) SP-MS 3/11(27,3%) PP-MS 3/11(27,3%)

(1b)

RESULTS

Out of the 21 MS patients, 11 (52,4 %) had a relapsing-remitting MS, 7 (33,3%) a secondary progressive MS, 3 (14,3 %) a primary progressive MS. Mean EDSS was 4,2±1,8 in group A and 3,8±1,7 in group B. In group A, no significant differences were observed between the mean of baseline score of MFIS (35,8 ± 10,2) and those measured after 32 weeks of APA (35,5 ± 11,4) [p 0,733]. Also, no changes were found between baseline and 32 weeks for TUG (4,74± 2 vs 5,09 ±2,2) [p 0,623] and for AI (8,42 ± 3,3 vs 9,02 ± 3,9) [p 0,85] (Figure 1). In contrast, in group B there was a significant reduction in MFIS at 32 week (23,3 ± 10,5), compared to baseline (41 ± 14,7) [p 0,01]. The same was evident for TUG (6,03± 2,14 vs 4,67 ± 1,8) [p 0,069] and AI (11,2 ± 6,02 vs 9,05 ± 5,7) [p 0,042] (Figure 2).

Figure 1. Group A: no significant differences from baseline to end of training in the mean of MFIS, TUG and AI scores (p>0,1).

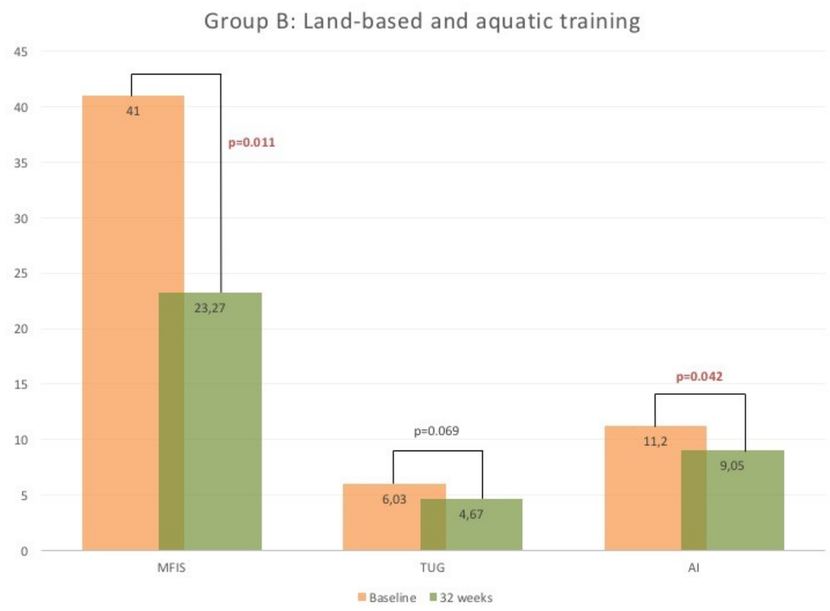

Figure 2. Group B: there are significant differences from baseline to end of training in the mean of MFIS (p=0,01), TUG (p= 0,69) and AI (p=0,42) scores.

DISCUSSION AND CONCLUSION

Combined physical activity has beneficial effects on management of fatigue and gait in MS patients. Considering the lack of an effective pharmacological treatment for fatigue in MS, a periodic combined physical activity could be an helpful non-pharmacological treatment for ameliorating this disabling symptoms in MS.

REFERENCES

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