CO36-003-e
Training adaptation in patients with Parkinson’s diseases
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Keywords: Physical therapies; Reconditioning therapies; Parkinson’s disease; Exercise test

Introduction.– Exercise testing’s protocol and exercise limitation of the patients affected by Parkinson’s disease is rarely described. The study of the adaptation to the efforts appears nevertheless an interesting prerequisite to build a program of rehabilitation individualized. The physical activity demonstrated its endogenous dopaminergic-secretory effects.

Objective.– To describe and determine the parameters that limit the physical efforts of patients affected by Parkinson’s disease.

Materials and methods.– Retrospective and descriptive study of exercise tests in 13 patients affected by Parkinson’s disease, 11 men and 2 women, with an average age of 61-year-old [46–78], between January 2008 and March 2013 at the university hospital of Reims. Eight patients were quoted at a stage I and II according to Hoehn and Yahr and 5 patients were quoted at a stage III.

Results.– Eight tests were maximal. All the patients presented an intolerance to physical efforts [1], severe for 8 of them (61.5%). The test was stopped because of the impossibility of keeping the rhythm of pedaling for 4 of the patients (31%) and because of myalgia or tiredness for 4 other patients (31%). The first threshold was premature in 38.5% of the cases (n = 5) that implies a limit of peripheral origin. There was a defect of recruitment of the volumes in 31% of the cases (n = 4) and ventilatory equivalents raised in 61.5% of the cases (n = 8). The kinetics of the pulse of O2 were correct, but 77% presented a pulse of insufficient final O2 (n = 10).

Conclusion.– The first limiting factors is peripheral. But cardiac and pulmonary system seems to be involved to, even if exploration at rest are normal. The cardiac and pulmonary adaptability is element that would be more explore, particularly by embarking measures for the cardiac output during physical effort.

Reference
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Effects of 3 months of aerobic training on fitness of Parkinson’s disease patients
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Objectives.– To assess the effects of an aerobic training for people with Parkinson’s disease (PD).

Methods.– Fourteen patients with Hoehn & Yahr stage [1] < III of PD were allocated to either 3 months of twice-weekly aerobic training (AT group; n = 8), or a control group (C group; n = 6). AT consisted in progressive stationary bike training between 50 and 70% of peak work load (PWL). Maximal incremental test on a cycloergometer was performed before and after rehabilitation. Anxiety, depression and quality of life were assessed using questionnaires. An Anova for repeated measures was used for statistical analysis.

Results.– There was a significant “group by time” effect for peak work load (+21% for patients of AT group vs –9% for people of C group). Heart rate 2 minutes after test completion was also significantly decreased in AT group (post hoc analysis, P < 0.01). Patients of AT group also increased their ratio of predicted VO2 peak (+17%) but in a non-significant way. No significant changes in anxiety, depression or quality of life could be highlighted.

Conclusions.– This study showed significant improvement of PWL and faster recovery in patients with PD of the AT. Significant effect on VO2 peak could need a more intense training program.

Reference
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CO36-005-e
Impact of 8 weeks of standardized physical therapy on standing up from the floor in Parkinson’s disease
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Objective.– In Parkinson’s disease, current treatments using medication and surgery prove unable to prevent functional dependence due to disease progression. Few studies measure the functional effects of physical work.

Methods.– Ten patients (4 F; age 68 ± 10; Hoehn & Yahr 2–3) underwent standardized physical therapy (asymmetric motor reinforcement or a generic program) at home for 8 weeks, 3 times a week for 60 minutes. Patients were evaluated in the OFF-state before and after the intervention, using the Global Mobility Task (GMT, standing up from the floor assessment).

Results.– Speed of standing up more than doubled after 8 weeks of standardized physical therapy (total standing up time, D1 44 ± 14 s, D60 17 ± 6 s, P < 0.05, Wilcoxon). The most accelerated stage was knight-to-stand-up (time D1, 23 ± 8 s, D60, 4 ± 1 s, P < 0.05).

Discussion.– Within 8 weeks, standardized physical therapy may provide functional benefits that are comparable to those of drug treatments in Parkinson’s disease.

Further reading
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CO36-006-e
Creation of a healthcare network for management of Parkinson’s disease
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Keywords: Network; Parkinson’s disease Management of Parkinson’s disease (PD) involves several health care professionals: – general practitioners, neurologists and neurosurgeons who install and follow-up pharmacological and/or surgical treatments; – rehabilitation therapies are managed by physical medicine specialists, physiotherapists, speech pathology therapists, occupational therapists, psychologists; – psychosocial and financial support to patients and caregivers is provided by associations and state funding.

Early stages of PD (Hoehn and Yahr stages 1, 2, 3, 4) [1] can benefit from specific rehabilitation programs in specialized outpatient clinics: strategies used over few weeks periods include motor strengthening programs in the lower limb, high intensity aerobic exercises [2], Lee Silverman Voice Treatment [3] for training of voice and breathing, evaluation of cognitive impairment and teaching of strategies to compensate difficulties in ADL tasks.