ABSTRACT

BACKGROUND: Decreased mobility and walking capacity occur frequently in Parkinson's disease (PD). Robotic treadmill training is a novel method to improve the walking capacity in rehabilitation.

OBJECTIVES: The primary aim of this study was to investigate the effects of robotic treadmill training on functional mobility and walking capacity in PD. Secondly, we aimed to assess the effects of the robotic treadmill training the motor symptoms and quality of life in patients with PD.

METHODS: Seventy patients with idiopathic Parkinson's disease who admitted to the outpatient clinic of the rehabilitation hospital were screened and 12 ambulatory volunteers who met the study criteria were included in this study. Patients were evaluated by Hoehn Yahr (HY) scale clinically. Two sessions robotic treadmill training per week during 5 weeks was planned for every patient. Patients were evaluated by the Timed Up and Go (TUG) test, 10 meter walking test (10 MWT), Unified Parkinson's Disease Rating Scale (UPDRS) motor section and Parkinson's Disease Questionnaire-39 (PDQ-39) at the baseline, at the 5 and 12 weeks. Cognitive and emotional states of the patients were assessed by Mini Mental State Examination (MMSE) test and Hospital Anxiety and Depression Scale (HADS) at the baseline. All patients were under medical treatment for the PD in this study and drug treatment was not changed during the study.

RESULTS: Ten patients completed the study. The mean age was 65.6 ± 6.6 years. Five patients (50%) were women. Disease severity was between the HY stage 1-3. Two patients did not continue the robotic treadmill training after 7 sessions. They also did not want to come for control visits. TUG test, 10 MWT and UPDRS motor subscale scores showed statistically significant improvement after robotic treadmill training (p = 0.02, p = 0.001, p = 0.016). PDQ-39 scores improved significantly after robotic treadmill training (p = 0.03), however, the scores turned back to the baseline level at the 12. week control.

CONCLUSION: As a result of this preliminary study, robotic treadmill training was useful to improve the functional mobility, walking capacity and motor symptoms in mild to moderate PD. Robotic treadmill training provided a transient improvement in the quality of life during the treatment.

KEYWORDS: Lokomat, LokomatPro, 10 meter walk test, Parkinson's disease, Timed Up and Go test, functional status, quality of life, robotic treadmill training.

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