Experience in gait training with Lokomat® robotic therapy in patients with neurological disorders of the Instituto Teletón Santiago, Chile. 2008-2009

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ABSTRACT

Introduction: The Lokomat® robotic therapy is proposed as a new alternative for the rehabilitation of gait in patients with neurological disorders of central origin.

Objective: To describe the effect of the Lokomat® in speed, gait pattern, postural stability, third party assistance, and the need of technical aids for gait in a group of patients with neurological disorders in the Institute Teletón Santiago between April 2008 and June 2009.

Patients and Methods: 77 medical records of patients in the Lokomat® program were selected. These included patients with cerebral palsy (CP), stroke (CVA), traumatic brain injury (TBI) and ataxic syndrome. The patients had an average age of 16.2 years (range 4.65 to 25.98 years). Results are evaluated pre and post training measuring gait speed (10 meters test), gait pattern (visual scale of Edinburgh), postural stability and transfers (timed up and go test), third party assistance (functional ambulation categories - FAC) and gait functionality (functional mobility scale- FMS). The Wilcoxon test was applied to measure changes before and after with p < 0.05.

Results: Significant changes were observed in all tests in the group of subjects with CP (p < 0.001) after orthopedic surgery and in speed and gait pattern in CP patients after onabotulinumtoxin A infiltration. In patients with TBI and stroke changes in gait pattern and functional tests were evident (p < 0.05). In ataxic subjects improvement in postural stability and transfers were recorded (p < 0.01).

Conclusions: The Lokomat® robotic orthosis is a useful tool in improving gait related parameters in the neurological diseases analyzed, especially in CP patients after orthopedic surgery.

Key words: Lokomat®, cerebral palsy, traumatic brain injury, stroke, ataxia.