GAIT REHABILITATION IN SUBACUTE HEMIPARETIC STROKE: ROBOT-ASSISTED GAIT TRAINING VERSUS CONVENTIONAL PHYSICAL THERAPY

Abstract

Background and Purpose: Walking is a major feature on which stroke patients place the greatest value. In the last decade, robotic-assisted therapy became an important part of modern rehabilitation after stroke. This present was purposed to evaluate the effectiveness of robotic-assisted gait training plus conventional physical therapy program training in subacute stroke patients.

Methods: 60 first-ever, non ambulatory subacute stroke patients were randomized into experiment and control groups. The experiment group received 30 minutes robotic-assisted gait training plus 30 minutes conventional physical therapy while the control group received 60 minutes conventional physical therapy every working day for 4 weeks. The outcome measurements were assessed by the Functional Ambulation Category (FAC), Barthel Index (BI), Berg Balance Scale, Resistant to Passive Movement, lower extremity part (REPAS), 10-Meter Walk test, and 6-Minute Walk test by a blinded assessor at initial, 4 weeks, and 3 months follow up.

Results: After four weeks treatment, the mean change difference (SD) of the FAC between two groups is 1.55(0.3), 95% CI=0.90-2.20 while the BI = 16.72(4.7), 95% CI=7.29-26.16, P<0.001 for FAC and 0.001 for BI which the experiment group is significant better than the control group for every outcomes measurement except the REPAS at 4 weeks and 3 months ($P < 0.05$).

Conclusions: In subacute stroke patients, the robotic-assisted gait training plus conventional physical therapy was better than solely conventional physical therapy as regarding to the walking ability, activity of daily living, balance, gait speed, step length and endurance.

Clinical Trial Registration: http://www.clinicaltrials.gov. Identifier: NCT01187277.

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