Abstract

BACKGROUND: The addition of functional electrical stimulation (FES) to treadmill gait training with partial body weight support (BWS) has been proposed as a strategy to facilitate gait training in people with hemiparesis. However, there is a lack of studies that evaluate the effectiveness of FES addition on ground level gait training with BWS, which is the most common locomotion surface. OBJECTIVE: To investigate the additional effects of commum peroneal nerve FES combined with gait training and BWS on ground level, on spatial-temporal gait parameters, segmental angles, and motor function. METHODS: Twelve people with chronic hemiparesis participated in the study. An A1-B-A2 design was applied. A1 and A2 corresponded to ground level gait training using BWS, and B corresponded to the same training with the addition of FES. The assessments were performed using the Modified Ashworth Scale (MAS), Functional Ambulation Category (FAC), Rivermead Motor Assessment (RMA), and filming. The kinematics analyzed variables were mean walking speed of locomotion; step length; stride length, speed and duration; initial and final double support duration; single-limb support duration; swing period; range of motion (ROM), maximum and minimum angles of foot, leg, thigh, and trunk segments. RESULTS: There were not changes between phases for the functional assessment of RMA, for the spatial-temporal gait variables and segmental angles, no changes were observed after the addition of FES. CONCLUSION: The use of FES on ground level gait training with BWS did not provide additional benefits for all assessed parameters.

Keywords

Stroke, physical therapy, rehabilitation, intervention, kinematics.