
THE EFFECT OF THE TREDMIL PROGRAM ON THE SPATIO-TEMPORAL GAIT PARAMETERS OF PATIENTS AFTER STROKE

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Background and Aims

Treadmill training is a part of kinesitherapy treatment aimed at practicing a more correct gait pattern in the rehabilitation of patients with a mild form of hemiparesis. The aim of this study is to objectively measure the spatio-temporal parameters of gait to determine whether mechanically assisted walking improves the parameters of the gait scheme, gait cycle and its temporal determinant.

Methods

The pilot study with a series of subjects included a total of 29 men with an average age of 45-65 years, in the subacute phase of recovery after a stroke, who are able to walk independently. In addition to daily kinesitherapy, occupational therapy and electrotherapy, the subjects had a 30-minute training in mechanically assisted walking. The intensity of exercise was initiated by a subjective sense of the speed that the patient could master and gradually increased. Rehabilitation was carried out 21 days / 5 days a week. Outcome measures were monitored by Barthel index, Trunk Control Test, Motoricity Index, and registration of kinematic changes in gait with Zebris FDM-T HP/Cosmos software.

Results

The Wilcoxon rank test showed a statistically significant increase in all parameters of the functional tests used by $p = 0.000$ and a significant statistical improvement in the horizontal distance between the two central starting points of the heels of opposite legs ($p = 0.031$), cadence ($p = .015$), time to step ($p = 0.014$) and a very significant improvement ($p = 0.00$) in speed, The width of the steps of the opposite and the length of the stride of the same leg, as well as the phase of support and the phase of swinging of both legs.

Conclusion

Treadmill gait training in mild forms of hemiparesis is an additional tool for a more correct gait pattern, which enhances functional recovery and reduces rehabilitation costs.

Keywords: Stroke, treadmill training, gait