

Abstract

Title: Assessment of the effect of CDP training in patient after lower extremity amputation

Objectives: The aim of this diploma thesis is to describe the influence of the individually set training programme on the computerized dynamic posturography (CDP) NeuroCom Smart EquiTest System (further referred to as EquiTest) independent of traditional therapeutic exercises in the patient after unilateral transfemoral amputation of the lower limb and to monitor the effect of this training on postural behaviour, ability of functional mobility and balance, frequency of falls and balance confidence in an individual after amputation.

Methods: This is an experimental pilot case study that monitors the effect of an individually designed five-week training programme (with a frequency of exercises 2 times a week) on the EquiTest in one patient after unilateral transfemoral amputation of the lower limb. Examination of postural functions was performed by the EquiTest using SOT, MCT, and LOS tests. The ability of functional mobility and balance was tested using the functional Timed up and go test (TUG). The frequency of falls was detected from the proband's medical history. The balance confidence was determined using the Activities specific balance confidence scale (ABC). All measurements were made in two terms, i.e. before and after the intervention. The output data was then compared with the input data. Because the effect of the intervention was investigated only in one proband, it was assessed subjectively (qualitatively). Clinical significance was assessed in only two tests for which the minimal detectable change was known from the available literature.

Results: The results showed that the CDP training programme has an effect on improving postural functions measured by the EquiTest and reducing the frequency of falls. There was no clinically significant improvement in the ability of functional mobility and balance measured by the Timed Up and Go test and in the balance confidence measured by the Activities specific balance confidence scale.

Keywords: lower limb amputation, computerized dynamic posturography, postural training, postural control, frequency of falls, TUG test, ABC scale