THE ANDAGO FOR OVERGROUND GAIT TRAINING IN PATIENTS WITH GAIT DISORDERS AFTER STROKE

A USABILITY STUDY – PRELIMINARY RESULTS

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INTRODUCTION

Most stroke survivors experience initial and long-term mobility restrictions. New technologies promise to improve outcomes[1]. The Andago[2] is a recently developed overground gait and balance training device, allowing safe, harness-secured overground mobility with a therapist driven device.

PURPOSE

The objective of this study was to evaluate the usability of the Andago for gait and balance training in patients with gait disorders after stroke and its acceptance by patients and therapists.

METHODS

The Andago was tested with patients already performing a gait training on the Lokomat[3] in two sessions: The first being a training session to familiarize patients and therapists to the new device and to define optimal settings for its use. In the subsequent therapy session, the patient performed a specific course, which represented real-life conditions as predefined by our infrastructure: straight stretches, left and right turns and passing normal and sliding doors. Therapists and patients rated handling, usability and satisfaction. Thirteen subacute stroke patients participated (Tab. 1).

DISCUSSION & CONCLUSIONS

The Andago seems to be a promising device in overground mobility training for patients with moderate gait disorders after stroke (FAC<2). Short setup times and a high satisfaction using the device through therapists and patients seems to make it a promising adjunct to conventional overground gait therapy.

Nevertheless, our results could be biased by the left/right ratio of our cohort: right hemispheric lesions are more likely to show spatialtemporal deficits which could affect the use of the device.

Times since onset of the stroke were unequally distributed. Subacute and very few long term chronic stroke patients were included.

Different satisfactions of the Andago applicability regarding the FAC could be explained by an overestimation of patient’s expectations and therapist’s estimations of effectivity of the device.

Further research is needed, to show implications for a use of the Andago with patients suffering from a neurological gait disorder, e.g. in a subacute setting – four to eight weeks post stroke.

RESULTS

# Safety

No (severe) adverse events leading to a discontinuation of the intervention occurred. Sometimes the therapists had to intervene due to collisions e.g. while passing a door frame.

# Usability

Time to prepare and dismount device & patient was about 8 and 1.5 minutes respectively (Fig. 1).

# Eligibility: Walking distance

Patients suffering from a FAC≤1 had difficulties using the device properly due to severe paresis of the affected leg. Neglect or hemianopia appeared to be an additional limitation in the efficient use of the Andago (Fig. 2).

# Satisfaction

Overall satisfaction was higher in patients than in therapists (Fig. 3).

In comparison to a gait training on the Lokomat, most of the patients favoured the Andago, independent from their gait abilities represented by the FAC. In contrast, therapists preferred the use of the Andago more likely in patients showing a FAC>2 (Fig. 4).

REFERENCES


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