Conclusion.– A clinical trial, a comparative study of superiority, monoelectric, in two parallel groups is included in phase I. Objective: show the superiority of an approach to prevention of shoulder pain of patients post-stroke, in stroke unit.

Further reading


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Bimanual coupling in stroke patients and its applications for rehabilitation in occupational therapy

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Keywords: Stroke; Bimanual coupling; Rehabilitation

Background.– Although the majority of functional activities implicate both upper-limbs, the assessment and rehabilitation of bimanual synergies remain largely neglected following a cerebrovascular accident (CVA). This issue is notably important knowing that more than half of stroke patients suffer from chronic functional limitations concerning mainly manual activities.

Objectives.– Bimanual behavior is primarily characterized by the presence of a spontaneous coupling between the limbs. This coupling is observable via the presence of spatio-temporal interactions between the kinematics of each limb. In stroke patients, many questions remain regarding, on the one hand, the conditions according to which such coupling persists and, on the other hand, how it could be eventually restored. The aim of our study (in progress) is to provide some answers to these questions.

Methods.– The present study is a monocentric prospective cohort. Patients were recruited in their sub-acute phase (> 2 months). They had no major executive functions deficits. Following an initial phase of traditional rehabilitation, patients underwent a specific rehabilitation program for a period of 6 months. The rehabilitation program consists in warming-up unimanual exercises, followed by bimanual exercises designed to stimulate the expression of coupling. It includes also bimanual exercises that were inspired from daily living activities.

Assessment sessions are planned at pre-, mid-, and post-rehabilitation. An additional assessment session is also scheduled following a retention period. Assessments included a kinematic testing wherein kinematic variables were acquired via a digitizer, and a clinical evaluation including functional tests.

Results.– Preliminary results show an alteration in bimanual interactions following stroke, which related to the severity of the lesion. This alteration seems, however, to be more or less reversible following a proper intervention.

Discussion.– We suggest a simple protocol whose aim is to re-establish bimanual coupling and readapt functional synergies involving upper-limbs. Our preliminary results are encouraging and open doors to further investigations.

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Integration and evaluation of a lexical prediction engine in a virtual keyboard support on text input for people with mobility impairments

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Purpose.– Information technologies play a large role in both the social and professional lives of individuals. Text input using assistive devices allowing computer access for disabled people is often slow. The aim of this study was to evaluate the effect of a dynamic on-screen keyboard (custom virtual keyboard [CVK]) and a word prediction system (Sybille) on text input speed in patients with functional tetraplegia.

Methods.– Ten patients tested four modes in their homes (Standard, Standard + Word, Dynamic and Dynamic + Word) for one month before choosing one and continuing to use it for another month.

Results.– The results suggested that the effect of the word prediction system on text input speed was very variable across subjects. Only the patient who used a scanning system appeared to benefit. The same was found for the dynamic keyboard.

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Conclusion.-- This study raises many questions regarding indications for particular assistive devices and software as well as the appropriate ergonomic design of a dynamic keyboard and the number and position of words which should be predicted. The development of the CVK is continuing and future studies will aim to address these questions in larger numbers of patients.

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Therapy protocol constraint chronic hemiplegic patients: Retrospective study
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Keywords: Constraint-induced therapy; Stroke; Hemiplegia

Introduction.-- The motor and functional recovery of hemiplegia rupture occurs in the first 3 to 6 months after stroke. Only 15% of patients recover the use of their paretic limb. The constraint-induced therapy (ICT) has proven its effectiveness [1], raising great hopes, but is now showing its limits.

Objective.-- To study the effectiveness of a protocol of ICT applied to stroke patients at a chronic stage.

Methods.-- Sixteen patients (age: 50.3 ± 13.5 years; time after stroke: 6 to 216 months (35 ± 50); sex ratio: 12 H/F; hemiplegic side: nine rights/seven left; hand dominant 10/6 not) have made ICT 4 weeks (6 h/day, 5 days/week) in hospital. Daily activities were performed with the constraint of a mitten protection on the healthy hand. Patients were evaluated before (t0), the resulting (t1) and 9 months later (t2) the ICT with dynamometers (grasp, key pinch), the test of nine pins, the Box and Block Test (B & BT), the Fugl-Meyer Motor Assessment on Toulouse (BMT).

Results -- Progress at t1 are significant for the strength of the grasp of the key pinch, the test of nine ankles, B & BT, the Fugl-Meyer, the BMT. Nine months later, significant progress persist for the strength of key pinch, the test pins 9 and BMT.

Conclusion.-- Our protocol of ICT is accompanied by progress in terms of analytical strength, manual skills and reintegration of the paretic hand in the acts of everyday life. This type of rehabilitation protocol could usefully be implemented during maintenance visits for hemiplegic well recovered. What happens when motor recovery is insufficient to enter into a Memorandum of ICT? We are currently testing the value of a Memorandum of transcranial magnetic stimulation in patients with stroke hemiplegic upper extremity traction limited and does not meet the usual criteria of ICT.

Reference

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