Keywords: Rehabilitation medicine; Stroke; Hemiparesis; Functional recovery; Activities of daily living; Quality of life

On the base of systematic clinical observations and investigations in current article, specific complex neurorehabilitation algorithms were structured (incluing drugs and physical modalities).

Goal: Comparative evaluation of the efficacy of early or late peroral drug cerebroprotection on efficacy of neurorehabilitation (including functional recovery, autonomy in activities of daily living and capacity for different activities) in patients with post-stroke hemiparesis.

Patients and methods.– A total of 78 post-stroke in-patients (3 groups of 26 each) were observed during a 20-day rehabilitation. The rehabilitation complex included in all cases physiotherapy with massage methods, including occupational therapy (and education in activities of daily living); electrostimulations of extenders of the hand – altogether with a systematic antihypertensive and anti-aggregation therapy. In patients of groups 1 and 2, we added a peroral cerebroprotector (no-toxic drug): in group 1: – during first 10 days, in group 2: – during last 10 days. Patients were investigated before and after therapy and one month later, according a protocol with all results (including neurological and functional status, level of the hemiparesis – Brunstrom’s test; evaluation of the capacity of independence in self care, familiar activities, professional activities; evaluation of different types of grips and locomotion). Statistical evaluation was effectuated with t-test (analysis of variances Anova) and Wilcoxon rank test (non-parammetrical correlation analysis).

Results and discussion.– Comparative analysis of results proved a statistically significant favorable effect (P<0.001) on some important parameters: improvement of the muscle force, range of motion and functional capacity of the hand (including grip); stabilization of the balance and locomotion (tests of Brunstrom); improvement of capacity of hemiparetics for effectuating different activities (self-service, domestic care, professional activities). The stability of the results one month after the end of neurorehabilitation was very satisfactory – expressively in drug groups, especially in group 1. In conclusion, we must underline that the post-stroke hemiparesis is most sensitive to rehabilitation including nootropic drugs and the early cerebroprotection stabilizes results concerning functional recovery and autonomy in activities of daily living.


P019–EN
Botulinum toxin injection for pathological lower limb flexion in hemiplegic patients

M. Rousseaux *, W. Daveluy, J. Paquerault, O. Kozlowski, F. Beaupencourt de rééducation neurologique, hôpital Swynghedauw, CHRU de Lille, 59037 Lille, France
*Corresponding author.

Keywords: Botulinum toxin; Spasticity; Lower limb; Flexor schema

Objectives.– Hemiparetic patients can show lower limb spasticity in a flexion schema at the hip and knee. This causes pain, impairs passive functions and significantly hampers standing upright and locomotion. Reducing lower limb flexion is an important goal, but conventional oral treatments and physiotherapy have modest effects. We present an open label study suggesting that botulinum toxin injections can be effective on pain and passive functions, including bed positioning.

Patients and methods.– Ten patients with a mean age of 60 were included after a stroke (8 cases) or traumatic brain injury (2 cases). All were impaired in daily living by severe hip and knee flexion, and possibly by hip rotation and/or adduction. Injections (300-400U Botox®) were systematically performed in the iliacus and hamstring muscles and, when necessary, in the hip adductors and/or rotators, rectus femoris and ankle plantar flexors. Evaluations were performed before (D-15, D1) and after (Week 6–10; W 21–26) treatment.

Results.– Spasticity reduction (Ashworth score) was modest and there was no change in motor control. But we found a significant gain (P<0.05) on the spontaneous lower limb position when the patient was supine or standing with support, and on the passive range of motion in hip and knee extension. Active functions (transfers, locomotion) were not improved, except in one case. Conversely, a significant effect was found on passive functions, including cleaning and dressing, bed facilities, passive transfers, and pain. Efficacy was more evident at week 6–10 but was still present at week 21–26. Tolerance was fair, with transient pain during iliacus muscle injection. Patients were satisfied and reinjection was considered in each case after a 5-month period.

Discussion.– Spastic scheme in lower limb flexion is not frequent in patients with severe encephalic lesions, but it definitely impairs daily living. This study suggests that after a stroke or a traumatic brain injury, botulinum toxin injection is able to improve comfort, passive functions and pain, with fair satisfaction.


P020–EN
Interest of aluminum foil in gait analysis after stroke

C. Lombard, J. Renotte, M. Boirel, A. Terret, C. Gougas, E. Guettard *, CRF Ste Clotilde, 19, bis chemin de la clinique Ste Clotilde, BP60093, 97492 Saint-Denis cedex, Reunion
*Corresponding author.

Keywords: Gait; Stroke; Claw toes; Aluminum foil

A 28-year-old woman suffered from left hemiplegia after a cerebral infarction secondary to carotid dissection 4 months ago. She usually walked without technical device except an orthoses Dyna Ankle®. Spasticity was observed on the lower limb muscles as the quadriceps, with a dynamic equinovarus and claw toes.

Gait was analysed on a 7 m aluminum foil with video on profile. Viewing of the video highlighted the asymmetry of the support time, failure to control the knee with a partial recurvature. On a distance of 7 m, 9 steps were completed. Plantar pressure distribution and especially claw toes were difficult to observe.

The aluminium foil was studied and the length of the step was measured respectively 67.87 cm ± 5.95 on the left side and 66.68 cm ± 4.63 on the right side without statistically significant difference (t=0.426; p=0.68). Claw toes were easily visualized with the heel position during the ground contact.

After botulinum injection in soleus (300 U Dysport®), lateral and medial gastrocnemius (2 × 200 U Dysport®), tibialis posterior (100 U Dysport®), and flexor digitorum (100 U Dysport®), the comparison with previous aluminum foil allows us to achieve objective relevant improvement.

Beyond the physical examination, the video is useful for evaluating the effectiveness of the treatment of spasticity after stroke. However, without a device with analysis of plantar pressure distribution, the importance of the claw of toes is difficult to analyse and comparison after treatment is often subjective. The use of aluminum foil is a simple and inexpensive interesting method.

Further reading


P021–EN
Delivery of botulinum toxin for the management of spasticity: Twenty-two cases

*Corresponding author.

Keywords: Spasticity; Botulinum toxin; Quality of life

The management of spasticity was significantly changed with the advent of botulinum toxin as a therapeutic tool in physical medicine and rehabilitation.

Patients and methods.– Twenty-two patients were selected from a spasticity consultation of physical medicine and rehabilitation EHU, Oran over 04 months (November 2010–February 2011). An analytical assessment of spasticity in the Ashworth score and functional change was made for each patient. The injection of botulinum toxin has been shown to solve the orthopedic, health and functional problem.

Results.– The patients’ ages ranged from 03–66 years (mean age 23.47 years), 07 women (31.8%) and 15 men (68.1%). The varied aetiology of cerebral palsy,