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A three-dimensional kinematics study of the relationship between the joint movements of lower extremity and walking ability in hemiplegic gait of stroke

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Keywords: Stroke; Gait capacity; Leg; Gait analysis

Introduction.– To assess the relationship between the joint movements of lower extremity and walking ability (velocity) by analyzing the correlations between them through measuring the kinematics parameter in stroke patients.

Method.– Three-nine subjects with a chronic hemiplegia due to stroke, who could walk at least 10 m independently without a walking aid were recruited. Pearson's correlation was used to assess the relationship between the joint movements parameters of lower extremity and walking ability (velocity). The significance of the correlation was assessed by comparison with the sample correlation coefficient. The correlation coefficient was said to be significant at the 5% or 1% level if it exceeded the sample coefficient.

Results.– The correlation between walking ability and hip extend, and hip joint ROM, and knee flexion, and knee joint ROM of weak side showed significant relationships P<0.01. The correlation between walking ability and symmetry of hip extend, and symmetry of knee joints ROM showed significant relationships P<0.05.

Conclusion.– Restoration of normal movements of the lower extremity joint while walking is the important factor. Gait analysis can be of importance in documenting abnormalities and determining the effects of therapeutic modalities.

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Clinical modeling of neurolysis

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Keywords: Neurolysis; TENS & FES; Locomotion; Restoration; Self-care

Introduction.– TENS and FES have been used in several purposes, antispasticity an antilcoholic effects on muscles, neuromodulation and modification of motor patterns.

Material and methods.– Clinical investigation, with group of 30 patients suffered from UMNS, origin from ICV/TBI/13 female and 17 male/had done. Functional status of patients has been measured according own clinical flow sheet and scale, after their exposure to TENS/FES.

Results.– Results shows significant negative correlation between application TENS/FES and spasticity and improvement in locomotion of paralyzed arm. There is evidence that these effects are permanent.

Discussion.– Electroneurolysis by TENS as first and FES as an second act, through spinal cord and UMN, initiate reflex attenuation, suppressed the pathological and nociceptive reflexes and accentuated the spasmolytic effects. Mathematical analysis shows that program of TENS/FES enables functional progress in patients that reached plateau in recovery and support faster restoration function of hand and better self-care.

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Long-term quality of life and functional impairment after decompressive craniectomy for malignant middle cerebral artery infarction

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Keywords: Decompressive surgery; Malignant middle cerebral artery territory infarction and quality of life

Methods.– Patients from 5 French stroke units with malignant MCA infarction (MMI) treated with decompressive craniectomy between 2004 and 2010 were enrolled in the study. Survivors were followed for a minimum of 2 years after surgery. Long-term outcome was evaluated with the modified Rankin scale (mRs), the stroke impact scale (SIS) and the life satisfaction checklist (LiSat-11). Family caregivers answered the proxy version of the SIS and the Zarit Burden Interview (ZBI).

Results.– Mean age was 46.6 years. Two-years survival was 73%. 68% of the survivors were functionally independent (mRs ≤ 3) after 24 months of follow-up. No patient was in a vegetative state (mRs = 5). The mean patient assessment of global stroke recovery was 45%. According to the LiSat checklist, 64% found their life as a whole satisfying. Eighty-six percent of the survivors had a retrospective acceptance of craniectomy. Seventy-eight percent of their caregivers regarded their burden as mild.

Conclusion.– Patients with malignant MCA infarction treated with decompressive craniectomy display a sustained, long-term functional improvement that lasts far after the first year of their stroke. At 2 years and later, most of them are functionally independent and found their life satisfying. The burden on most of the caregivers ranged from none to mild.

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Knowledge of cardiovascular risk factors in stroke patients

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Keywords: Stroke; Knowledge; Cardiovascular risk factors; Rehabilitation; Assessment; Secondary prevention

Goal.– A prospective study was carried out in a neurological rehabilitation unit with the aim of assessing knowledge of cardiovascular risk factors in stroke patients.

Patients and methods.– Fifty-five patients performed an open and closed-ended questionnaire regarding stroke risk factors, stroke warning signs and improving stroke knowledge.

Results.– The mean number of stroke risk factors spontaneously cited by patients increased from 2.5 to 3.1. Patients most cited excessive alcohol consumption, smoking and high cholesterol level. They had difficulty to identify their own stroke risk factors, but then improved their answers in closed-ended questionnaire. Improving stroke knowledge was pretty poor especially concerning patients with hypertension, obesity and diabetes. The most frequent rules cited by patients were limited alcohol consumption, smoking cessation and low-fat diet.

Discussion.– Few data is available about knowledge of risk factors in stroke patients. The level of knowledge significantly improved during rehabilitation stay, with initial received opinions.

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