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Functional assessment of hemiparetic upper extremity after stroke: Literature review

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Keywords: Hemiparesis; Stroke; Functional assessment; Upper extremity

Introduction.– The evaluation of the functional capacities of the upper limb has a major role in the choice and the validation of the rehabilitation technique employed [1], and in the following of the evolution.

Material and method.– We questioned Pubmed database by using the keywords hemiparetic upper extremity; assessment; stroke. We selected the tests most often used for the functional evaluation of the hemiparetic upper limb. We took the International Classification of Function; Disability and Health (ICF) as framework. The criteria of analysis retained for each test were: the corresponding ICF level; the clinimetric properties; the value of the minimal clinically important difference and theirs limits.

Results.– We retained ten tests which are generally used: Fugl-Meyer for deficiency, Block and Box Test Nine Hole Peg Test, Wolf Motor Function Test, Action Research Arm Test, Motor Activity Log, ABILHAND and FIM for the activity and Stroke Impact Scale and EuroQol Quality of Life for the participation. For certain tests the value of the minimal clinically significant difference was given. We propose an algorithm, which can help clinicians in the choice of the clinical tool for evaluation of the hemiparetic upper limb according to the time since stroke, of the severity of the hemiparesis and the objective targeted by the evaluation.

Discussion.– There is a significant number of the tests validated and used for the functional evaluation of the hemiparetic upper limb. The choice of the assessment tool the most adapted to the targeted objective is essential for the interpretation of the results obtained.

Reference

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Fluoxetine and depression in hemiplegic patients: Study in Casablanca physical and rehabilitation medicine unit

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Keywords: Depression; Stroke; Fluoxetine

Objective.– The objective of this study is to evaluate the efficacy of fluoxetine in depression after stroke and its effect on patient response to rehabilitative treatment.

Materials and methods.– Prospective study over seven months from September 10, 2011 to April 10, 2012 affecting all depressed stroke patients followed in the rehabilitation unit of the Casablanca University Hospital. Onset of stroke had to be less than 30 days, patients with severe aphasia were excluded. The diagnosis of depression after stroke was as defined by the DSM IV; the severity of depression was assessed using the MADRS, the effectiveness of depression was assessed by the PASS. Treatment with fluoxetine was introduced to all patients at a rate of 20 mg/d. The MADRS and the PASS were reassessed at 1 and 2 months.

Results.– Of 45 patients with hemiparesis, 32 patients developed post-stroke depression (71.1%); the mean age was 53.5 years ranging from 31 to 82 years, the sex ratio was 1.5, ischemic stroke accounted for 76.9%; 26 patients (75%) had minor depression and 8 patients (25%) severe depression. PASS averaged 16.6/36 in early assessment and was 26.7/36 to 2 months of treatment. Fluoxetine was well tolerated, no adverse effects were noted.

Discussion and conclusion.– In patients with depression after stroke early prescription fluoxetine should be coupled with rehabilitation; this treatment has a dual effect, on depression and on motor recovery as demonstrated by authors reporting the effect of fluoxetine on brain neuroplasticity after stroke.

Further reading

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Analysis of 26 exercises of the Wii Fit Plus™ from Nintendo to facilitate prescription in rehabilitation of balance disorders

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Keywords: Wii Fit; Balance; Instability; Rehabilitation; Visual feedback

Introduction.– The Wii Fit ™ from Nintendo (associated to Wii Balance Board ™) (WFPN) is a rehabilitation tool for increasing use in the treatment of balance disorders, particularly because of its playfulness, which enhances patient adherence to rehabilitative program. The objective of this work is to offer therapists a summary table describing the precise characteristics of each exercise. As the result, the prescription of these exercises may be improved in terms of difficulty and analytical work arrangements.

Material and method.– Twenty-six games were reviewed by a committee of four therapists specialized in balance disorders rehabilitation. For each exercise, a score for the overall difficulty of execution was set from 1 (very easy) to 4 (very difficult). We determined a set of endpoints, for which each exercise was rated positively or negatively. These criteria represent the main areas of balance work proposed by the exercises, which are: antero-posterior weight transfer, medio-lateral weight transfer, multi-directional weight transfer, dynamic work with foot movement, synergistic movements of the trunk and lower limbs, movements of the upper limb (using remote), number of hands required (one or two), cognitive task requiring capacity of anticipation, adaptation and flexibility, and comments about the specificity of the exercise.

Discussion.– We note that the proposed games are only based on visual feedback, which is a limit to subjects with visual impairment or in whom visual dependence should not be reinforced. Some exercises require the use of both upper limbs and are not suitable for hemiplegic patients. The description of the characteristics of the 26 exercises of the WFPN will allow to better focus the rehabilitation of balance disorders, taking benefit of the entertainment and the variety of these games. Lastly, the low cost of the device and its easy use will allow to continue this rehabilitation with liberal physiotherapist or at home.

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