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Validation of the maximal frequency of small rapid alternating movements as a marker of functional impairment from upper limb tremor

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Keywords: Tremor; Rapid alternating movements; Functional impact

Introduction.– Apart from volumetric evaluations, there are no simple clinical tests to assess tremor-related functional impairment or to measure the efficacy of new treatments. We tested the hypothesis that the functional impact of hypermetric tremor (i.e. cerebellar type, essential or related to macroscopic lesions of the cerebellar pathways) could be measured by a simple test of rapid alternating movements of small amplitude performed in a clinic office.

Methods.– Nine consecutive patients with bilateral tremors (No. of visits/ patient = 5 ± 3; mean follow-up duration = 22 ± 12 months) were continuously followed at the PM&R department of Créteil between 2009 and 2012 and were included in this retrospective study. The bilateral evaluations included four quantitative tests: maximum frequency of rapid alternating pronation/supination movements of small (20°), MFS and large (90°), MFL amplitudes around the neutral position for 15 seconds using a portable alternometer. Two volumetric tests measured the amount of spilled water: patient tries to hold a cup full to the brim steady for 30 seconds (V30), posture, and patient is asked to move the full cup of water from the sink to the lips five consecutive times (V5X, slow targeted action). For each patient, we calculated the mean performances from all visits and explored Pearson’s correlations between MFS, MFL, V30, and V5X.

Results.– Tremor etiologies in the nine patients (3F, 64 ± 10 years, mean ± SD) comprised three with essential tremor and six with macroscopic cerebellar lesions. The characteristics of this cohort were: MFS = 1.5 ± 0.1 (Hz, mean ± SEM), MFL = 1.0 ± 0.1; V30 = 31 ± 9 mm, V5X = 36 ± 9 mm. Only MFS showed strong correlations with volumetric performances: MFS and V30 (r = –0.80; P < 0.001); MFS and V5X (r = –0.86; P < 0.001). MFL and V30 (r = –0.46; P = 0.06), MFL and V5X (r = –0.54; P = 0.02). The two volumetric performances were strongly correlated with each other (r = 0.97; P < 0.001).

Discussion.– The maximal frequency of small rapid alternating movements measured with an alternometer may be used a marker of tremor-related functional impact.

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Polio-survivors needs in France: Estimation from a specialized outpatient’s department

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Introduction.– Polio survivors require health care depending on the sequelae, with their own consequences and impact on health, specially their impact on bone and joint systems. We need to have better knowledge of the national needs’ extent for the future organization of care. The number of polio survivors is supposed to be 55,000 in France, from 400,000 to 1.1 million in Europe. The analysis of a specialized outpatient’s department involved in a regional network is reported as a basis for a national study.

Method.– Retrospective study in a PRM out-patient’s department since 2002 to 2011.

Results.– Among 217 patients examined, 200 files were enough informative to be studied. One hundred and forty-seven patients did not consult a PRM specialist since the initial event. They were 85 men, 115 women, mean age 55.2 years (20–86). Polio has been contracted in France for 114, out of France for 86, at a mean age of 4.2 years. The initial motor impairment involved: lower limb right/left 141/131, upper limb right/left 37/35, spine 37, and abdomen 19. Professional status: activity 43%, retired 22%, without work 20% (11% without information). Reason for consulting: global advice 54%; functional impairment 135, pain 77, social difficulties five. Twenty (10%) had three symptoms (fatigue, loss of strength, musculo-arithmetic pain) for a post-polio syndrome, 64 (32%) at least two. Ninety could walk without orthosis or assistive device. Orthopaedic disorders: limb inequality 106, hip flessum 12, knee recurvatum 29, knee flessum 41, equinus 36, varus foot six. Complementary test required: radiology 85, electromyography nine, respiratory function 11, sleep registration nine, RMI 9. Prescription: new orthosis 30, surgical advice 29, physiotherapy 106, dietary advice 20, social worker help 30.

Conclusion.– This analysis of a PRM out-patient’s department dedicated to polio survivors, gives insights into the needs of this population. A national study is desirable because of the increasing need of these ageing subjects.

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Moral and conventional judgements in multiple sclerosis

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