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The cognitive efficiency of the patients affected by DM1
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Keywords : DM1; CTG; Transmission; Cognitive efficiency; Educational level

Introduction.– Literature data are contrasted to clarify the relationship between global cognitive efficiency, the number of repetitions abnormal nucleotides triplet (CTG) and the mode of transmission in myotonic dystrophy type 1 (DM1). It is recognized that mental retardation is constant in pediatric forms of DM1. However, the presence of a cognitive impairment, and a association to the CTG in adult forms is still debated (Kaminsky and Pruna, 2012). Angerand and coll. (2011) showed a significant relationship between cognitive impairment and maternal transmission and a link between cognitive decline and the number of repetitions CTG.

Patients and methods.– Patients affected by DM1 were estimated to the CHU in Reims. We studied the global cognitive efficiency (WAIS IV), executive function (WCST, Stroop, TMT, Hayling, verbal Fluences) and the relationship between these results and the number of CTG, age, sort of transmission and that the educational level of volunteers.

Results.– Eighteen patients (13 women) are counted. The mean age is 44,2 years ± 15 years (SD). The average of the repetitions CTG is 514 ± 384 (SD). The age is correlated to the WCST. The scool level (mean = 8,78 ± 4,54 (SD)) is correlated to the all results of the WAIS IV. Only subtests Symbols and Code of the WAIS IV are associated among repetitions CTG.

Discussion.– We did not find association between the repetitions CTG and the verbal, visual, mnescic or executive cognitive capacities. We also find that the cognitive profiles and the repetitions of triplets are more heterogeneous in case of maternal transmission.

http://dx.doi.org/10.1016/j.rehab.2013.07.1079

P123-e
Ecological assessment of calculation disorders using BENQ in Physical and Rehabilitation Medicine (PRM)
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Keywords : Brain-damaged; Calculation disorders; Ecological assessment

Calculation disorders are frequent after traumatic brain injury, but not well-known as they are not evaluated during hospitalisation, with a major impact in their daily lives.

Objective.–To assess the calculation disorders of brain-damaged patients, using BENQ (French acronym for Ecological Daily Numerical Processing Battery), a standardized battery, and to identify various profiles.

Methods.–Seven patients during hospitalisation was included, aged 28 to 70, who had sustained a stroke-related brain injury (four left-brain damage, three right-brain damage). BENQ includes eight tasks involving the use of numbers in daily activities. We compared it to ECAN (an analytical test involving 35 tasks). Daily life autonomy was assessed using the MIF and BARTHÉL scales, communication using ECVB and the evaluation of cognitive and executive functions disorders using MOCA and BREF.

Outcome.–Four patients had a pathological score with the BENQ battery. Patients with a pathological BENQ score also obtained lower scores than the non-pathological group for ECVB, MOCA (16 ± 10.54 vs 25 ± 1.73 in the non pathological group) and BREF (9 ± 3 vs 15 ± 1). Their autonomy in their daily life was also more altered. Patients with left-brain damage scored lower than right-brain injured ones for ECVB (moy : 57.25 ± 14.55 against 78.67 ± 6.43 in the right-brain injured), BENQ (21.62 ± 7.6 vs 31.83 ± 5.06), MOCA and BREF. The three patients with left-brain damage and a pathological BENQ score specifically failed tests involving transcoding, encyclopedic knowledge, calculation, problem solving and executive functions. The only patient with right-brain damage and a pathological BENQ score specifically failed numerical conversion and the task of locating numbers. Patients with a non-pathological BENQ score obtained a normal score on the ECAN scale.

Discussion.– This preliminary study, enabled us to identify calculation disorders with brain-damaged patients and to show their consequences in daily life. We would need a larger population so as to better define patients’ profiles.

http://dx.doi.org/10.1016/j.rehab.2013.07.1080

P124-e
Preliminary study using galvanic vestibular stimulation (GVS) to reduce unilateral spatial neglect (USN)
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Keywords : Stroke; Spatial neglect; Galvanic vestibular stimulation

Objectives.– To study feasibility of GVS in a rehabilitation program, and determine optimal stimulation modalities and GVS effect duration.

Material/Patients and methods.– Prospective pilot study of four patients with stroke for at least 2 months. All patients received three types of stimulation (Sham, right cathodal-left anodal, right anodal-left cathodal) in a cross-over design. Two tasks were studied: a bisection of 20 cm lines (French neglect evaluation battery) and a stars cancellation task from the Behaviour Inattention Test (BIT). Tasks were repeated before, during, immediately after and 10 min after each stimulation type.

Results.– GVS is easy to perform during a rehabilitation program. No significant effect of GVS was found in group analyses. Nevertheless two patients improved their test results during right cathodal stimulation.

Discussion.– Right cathodal stimulation seems to be more effective than left cathodal stimulation on spatial attention tasks, as described in previous publications. Given the small sample of the study, individual variability could have hidden GVS effects. Other neglect evaluation tests with higher sensitivity for performance variations could be used. Further studies are necessary to document the efficacy of this seductive new NSU rehabilitation technique.

http://dx.doi.org/10.1016/j.rehab.2013.07.1081