

location and neglect recovery.

The aim of this study is to identify the lesion location associated with neglect and to evaluate the relationship between lesion and neglect recovery at 6 months after stroke.

Materials and methods: 47 patients with right brain damage were evaluated by means of neuropsychological tests in acute phase (in the first month after stroke) and in chronic phase (after the sixth month). The individual MRIs were analyzed with "voxel-based lesion symptom mapping".

Results: The patients with neglect in acute phase have an involvement of the following areas: temporal lobe, frontal lobe, occipital lobe, parietal lobe, basal ganglia, insula and white matter. The patients with NSU in a chronic phase, compared to those who have recovered the deficit, present a major involvement of white matter, and, of a lesser extent, of the post-central gyrus of parietal lobe.

Conclusions: Involvement of the white matter in addition to cortical lesions may be a determinant of long-term persistence of NSU.

P038

Dual task and gait analysis in patients with mild cognitive impairment

A. Nascimbeni¹, M. Rigano¹, S. Caruso², A. Salatino², M. Carena², A. Raviolo³, R. Ricci²

¹ Rehabilitation Unit ASLTO5 Moncalieri, Turin, Italy

² Department of Psychology, University of Turin, Turin, Italy

³ Psychology Unit ASLTO5 Moncalieri, Turin, Italy

Introduction/Objectives: Gait disruption has been reported in mild cognitive impairment (MCI) due to executive function impairment. The aim of this study was to ascertain if a gait-cognitive dual task may differentiate MCI patients from healthy individuals and how different cognitive tasks may interfere with patients' gait.

Participants, Materials/Methods: 13 MCI patients (age 75.6±3.9y) and 10 controls (72.1±3.9y) were included. Single tasks (ST) consisted in walking at self selected speed and in performing the cognitive tasks while seated. Dual tasks (DT) consisted in walking and carrying out the cognitive task. A gait analysis system was employed and the parameters considered were: cadence, double support, swing and gait speed. The cognitive tasks were: backward counting by one, recalling a short story and a verbal fluency task. Each test lasted one minute and the order was randomised across participants. A two-way ANOVA analysis with post hoc tests ($p < 0.05$) was employed.

Results: Gait analysis: the patients performed significantly worse than controls on swing, double support and gait speed parameters, both groups performed better during ST than DT conditions (independently by the secondary task). Cognitive task analysis: significant differences were found between groups on the short story recall and fluency tasks performances, while for both groups ST and DT were significantly different for the backward counting and short story recall test. No significant interactions were found.

Conclusions: Overall, MCI patients showed disrupted gait and cognitive performances with respect to controls. However, the dual task condition did not allow to further differentiate the two groups.

P039

Can the cognitive rehabilitation facilitate the motor rehabilitation in Parkinson disease?

C. Perin¹, C.M. Cornaggia¹, C.G. Cerri¹

¹ Istituti Clinici Zucchi-Carate Brianza (Monza)-University of Milano-Bicocca Italy

Introduction: The aim of this paper was:- to analyse the behaviour of Working (WM) and Procedural (PM) Memory before a Rehabilitation Motor program (RM) in Parkinson Disease(PD) in agreement with the

knowledge that WM and PM are important for the correct movement execution and that they are frequently compromised in PD(Goebe I,Neuropsychologia,2009); -to verify if a computerized-procedural-cognitive CPRC-training is able to show a positive effect on RM.

Methods: PD-subjects, (stage I-IV-Hoehn-Yhar-rating-scale), Minimental-State-Examinatin(MMSE)>24/30, Geriatric-Depression Scale(GDS)<5 underwent at baseline(B) to ActivityDaily-Linving(ADL) for functional status, Attentional-computerized-battery-www.psytest.net(WM-TAP) for WM and basal reaction times (BRT-MIDA) for PM. Extrapyramidal symptoms were rated using UPDRS (Unified-Parkinson's-Disease-Rating-Scale) at B and at the end(E) of a 10-session-RM. Randomly selected subjects (SG) were successively admitted to CPRC-training at complex reaction times(CRT) and plan-a-day-CogRehab-set(PCR) before the RM. SG and control subjects(CS) underwent 1-hour standardized stretching-balance-postural exercises 3 times/week. Parametric and non parametric tests for quantitative data and chi-square for qualitative data were carried out. Results:6-SG and 5-CS did not differ for age(70,67±4,18;69,83±12,80), sex(m/f=4/2;3/2), MMSE(26,37±2,38;26,07±3,34), ADL(4,67±2,34;4,33±1,75) and UPDRS(47,17±17,15;47,33±16,78) at B. BRT-MIDAand WM-TAP response-times were slower than standardized population in SG:BRT(range:303÷555msec),WM(range:493÷1064) and CS:BRT(range: 281÷507msec), WM(range:544÷1058msec) with errors and omissions in WM-TAP. Repeated measures ANOVA and chi-square PCR-errors analysis didn't suggest CRTtime and errors reduction respectively after training . UPDRS motor section(III) demonstrated a positive CG trend (UPDRS-III-median 23,00->22,00;p=0,055). No other differences were encountered.

Conclusion: PD rehabilitation is always motor (RM) and rarely cognitive(RC). The possibility to stress the PM via CPRC before a RM should be considered.

P040

Anxiety disorder and rTMS effect on left DLPFC in memory retrieval process

M. Balconi¹, C. Ferrari¹

¹ Catholic University of Milan, Department of Psychology, Milan, Italy

Introduction: Neuroimaging and Transcranial Magnetic Stimulation (TMS) studies showed dorsolateral prefrontal cortex (DLPFC) to be crucial to explain the relationship between anxiety disturbs and the memory performance in case of emotional stimuli processing. The DLPFC is thought to be crucially involved in mechanisms underlying the regulation of emotion, such as inhibition and extinction. Preferred processing of disorder-relevant information and focusing selective attention on it is conceived as an evoking and sustaining factor for anxiety disorders. The ability to suppress this automatic processing is severely impaired in patients with anxiety disorders or high in anxiety trait.

Methods: The present rTMS study aims to investigate the interaction between memory, emotion and anxiety, focusing on the contribution of rTMS to increase performance in high anxious subjects. Subjects, divided in two groups depending on their anxiety level (high/low, STAI), were required to perform a double task: an encoding task, where some lists composed by emotional and non-emotional words were presented to the subjects; a retrieval task, where the old stimuli and new stimuli were presented for a recognition performance. A rTMS stimulation was provided during the retrieval phase over the left DLPFC.

Results: We found that high trait anxiety subjects revealed a better performance (reduced error rate and RTs) in response to emotional cues when rTMS stimulation was performed on DLPFC.

Conclusions: This result suggested that left DLPFC may be specifically involved in the memory retrieval of emotional information and that an increased benefit is obtained for high anxious more than for less anxious subjects in response to rTMS.