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PROSPECTIVE MEMORY IN PRECLINICAL DEMENTIA PHASES: SUBJECTIVE COGNITIVE IMPAIRMENT AND MILD COGNITIVE IMPAIRMENT

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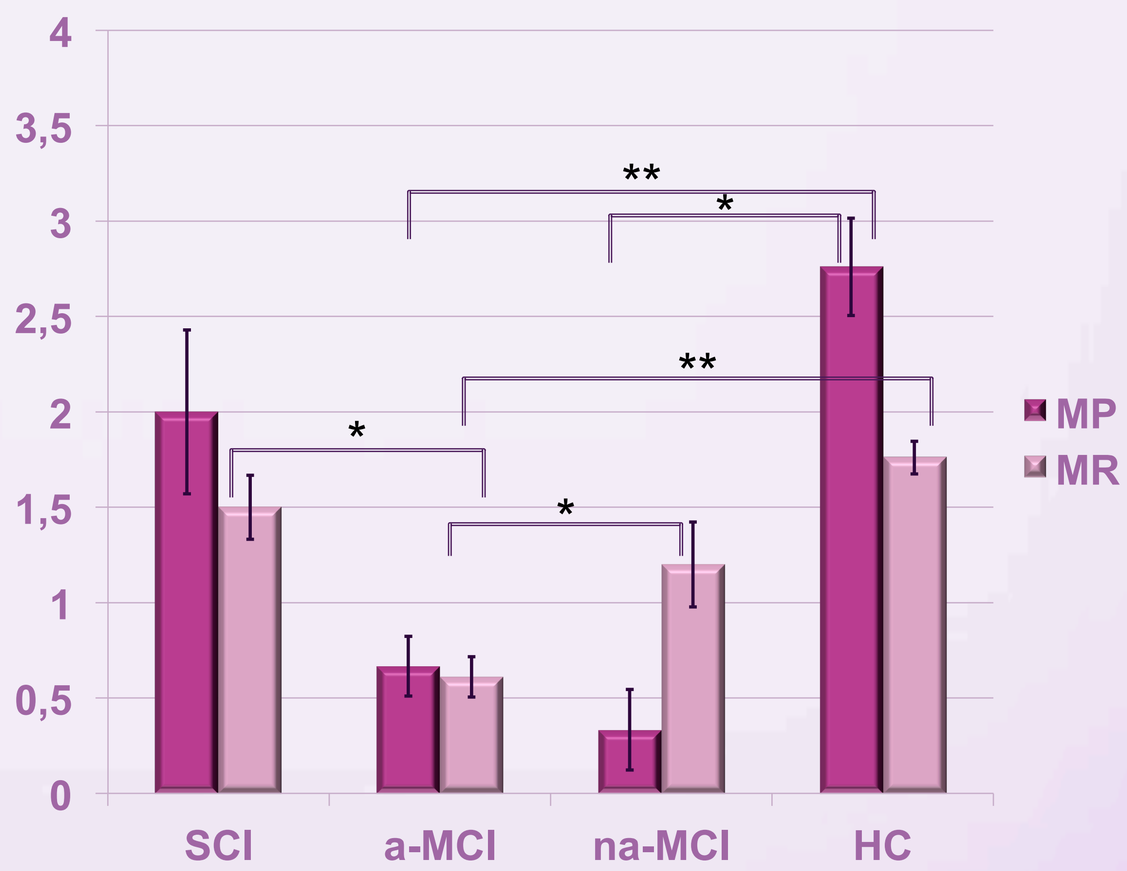
Background: Prospective Memory (ProM) refers to the ability to execute an intended action in the future. Successful prospective remembering has a great relevance to everyday functioning and it is crucial to maintain the ability of living independently. Impairment in ProM performance was observed in patients with Mild Cognitive Impairment (MCI)[1] and, recently, in subjects with Subjective Cognitive Impairment (SCI) [2-3].

Objective

Aim of this work was to compare ProM performance in subjects with MCI and SCI and to evaluate the relationship between ProM and neuropsychological tasks.

Subjects and Methods: an event-based prospective memory task was used to assess prospective memory dysfunction in amnestic MCI (a-MCI; n=69), non amnestic MCI (na-MCI; n=15), SCI (n=16) and healthy controls (HC; n=25). Separate scores were computed for correct execution of intended action (prospective component) and for recall of intention (retrospective component). All subjects were previously administered an extensive neuropsychological battery.
Some differences emerged between groups regarding age and education. In order to correct for age and education, non–parametric rank analysis of covariance (Quade's test) was used to compare groups on MP and MR.

	Age	Education	MP	MR
SCI	71,81± 5,17	13,25 ± 3,86	2,00 ± 1,66	1,50 ± 0.65
a-MCI	72,56 ± 3,51	9,35 ± 4,22	0.67 ± 1,30	0.61 ± 0,88
na-MCI	75,13 ± 3,31	6,67 ± 3,83	0,33 ± 0.81	1,20 ± 0,86
HC	68,45 ± 3,49	10,81 ± 4,42	2,67 ± 1,30	1,76 ± 0,43



Results: considering prospective component, MCI groups performed worse than HC (a-MCI p<.001; na-MCI p=.006), whereas there were no differences between the two MCI groups and between SCI and all other groups. Regarding retrospective component, a-MCI performed worse with respect to HC (p<.001), na-MCI (p=.001) and SCI (p=.010). No other significant differences among groups emerged. Correlational analyses revealed that prospective component was positively associated with measures of episodic memory in HC (rho=.46; p<.05), while retrospective component was positively associated with global cognitive functioning in a-MCI (rho=.31; p<.01) and with episodic memory performance in a-MCI (rho=.35; p<.01) and HC (rho=.41; p<.05).

Conclusions: according to previous studies, our results suggested that MCI subjects had impaired ProM performance. In particular, ProM impairment in **a-MCI** subjects involved **both prospective and retrospective** components, while in **na-MCI** retention of intended action **(retrospective component) appeared normal**. Regarding **SCI** subjects, performance on the **prospective component** of the task, although no statistically significant, appeared **better than MCI groups and worsen than HC**. Moreover, no differences emerged in the **retrospective component** between SCI and HC, suggesting that learning abilities was **preserved**.

This pilot study suggested that subtle difficulties in prospective remembering might be present in healthy people reporting self-perceived impairment in cognition, despite intact performance showed on standard neuropsychological tasks.
Future studies, with larger sample sizes, will be useful to confirm these preliminary data.

References:
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