Amnestic versus non-amnestic MCI: the role of cueing in a spatial navigation memory task
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AIM: The aim of the present work is to assess the effect of visual cueing in a spatial navigation memory task related to global cognitive profile in Mild Cognitive Impairment (MCI). Hippocampus is deeply involved in both spatial navigation (Maguire et al., 2000) and encode and recall processes by verbal cueing (Dubois et al., 2007). Rusconi et al. (2015) suggested differences in spatial navigation between amnestic (aMCI) and non-amnestic (naMCI) subtypes. However, the role of cueing in topographical orientation tasks is still poorly investigated.

MATERIALS: Patients were submitted to a neuropsychological examination and to the City Landmark Replacement (CLR), a subtest included in the experimental task “Plastic of ideal city” (Rusconi et al., 2015), composed of Lego’s building blocks, roads, squares and road signals resembling a real city. In CLR, after a learning phase, the examiner removed five landmarks from the “city” and participants had to use these visual cues reallocating them in the original position.

METHODS: Our study was carried out in six patients affected by MCI: three aMCI (mean age 77.33 years; range 74-85 years) and three naMCI (mean age 73.33 years; range 66-79 years). We considered Mini Mental State Examination (MMSE) and CLR at baseline and at follow-up (range 36-58 months).

DISCUSSION: Our results suggest that aMCI patients, who show a worst cognitive profile, do not benefit from visual cueing in spatial navigation memory tasks while naMCI patients maintain a constant performance both in spatial and cognitive tests.

RESULTS: At baseline, aMCI patients showed in CLR a worst performance than naMCI patients despite of similar global cognitive scores. At follow-up, aMCI maintained a worst performance in CLR compared to naMCI while a decline of cognitive profile was observed in aMCI compared to naMCI.

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<tr>
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<th>aMCI (CLR Recall)</th>
<th>naMCI (CLR Recall)</th>
<th>aMCI (MMSE)</th>
<th>naMCI (MMSE)</th>
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</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>1.2</td>
<td>2.8</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Follow-up</td>
<td>1.2</td>
<td>3.2</td>
<td>25</td>
<td>27</td>
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CONCLUSIONS: Given these preliminary results, it could be interesting to deepen the role of cueing – extensively studied as a semantic one – even in spatial navigation memory tasks, providing further evidence about the relation between “hippocampal memory deficits” and cues also in spatial memory.


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