MR CORRELATES OF DECLARATIVE MEMORY IN A COMMUNITY SAMPLE WITH VARIED COGNITIVE DECLINE

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INTRODUCTION

In clinical populations, human MR volumetric analysis has shown that different structures correlate with distinct types of declarative memories. We examined this hypothesis with measures of the hippocampus, temporal lobes, and parahippocampal gyrus in a community-dwelling sample of elderly Latinos. Subjects were taken from the SALSA Study, the Sacramento Area Latino Study of Aging, an ongoing longitudinal study on the prevalence of cognitive impairment and dementia. We used scales that may involve verbal episodic, verbal semantic, and non-verbal semantic memories.

METHODS

Subjects

Subjects were divided into four groups based on neuropsychological tests, neurological evaluations, and IQCODE scores (a measure of function).

Normal
Cog Imp - cognitively impaired
Cog + Fun Imp - cognitively and functionally impaired, not demented
Demented

Neuropsychological Testing

Subjects were given a neuropsychological battery that included the following memory scales:

1. Delayed free recall (verbal episodic memory)
2. Pictorial association (non-verbal semantic memory)
3. Object naming (verbal semantic memory)

RESULTS

2. Demographics Table

<table>
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<th>All Groups</th>
<th>Groups 1 &amp; 2</th>
<th>Groups 3 &amp; 4</th>
<th>Groups 1 &amp; 3</th>
<th>Groups 2 &amp; 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>72.4 (6.5)</td>
<td>72.9 (6.6)</td>
<td>72.3 (6.7)</td>
<td>72.4 (6.6)</td>
<td>72.9 (6.6)</td>
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<tr>
<td>Gender</td>
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<td>.159</td>
<td>.134</td>
<td>.116</td>
<td>.134</td>
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<tr>
<td>ICV</td>
<td>5.0 (4.0)</td>
<td>5.9 (5.1)</td>
<td>5.8 (5.3)</td>
<td>6.3 (4.6)</td>
<td>5.9 (5.1)</td>
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<tr>
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<td>.696</td>
<td>.630</td>
<td>.663</td>
<td>.686</td>
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<tr>
<td>ObjNM</td>
<td>.615</td>
<td>.696</td>
<td>.630</td>
<td>.663</td>
<td>.686</td>
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<td>.386</td>
<td>.401</td>
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CONCLUSIONS

1. Atrophied hippocampi and temporal lobes correlate with declarative memory performance in a population with varying cognitive impairments.
2. These correlations appear to be driven primarily by individuals with dementia, or moderate cognitive and functional impairments.
3. The parahippocampal gyrus volumes do not correlate strongly with any of our memory scales.
4. At this point it is not clear if there are relationships between different types of declarative memories and specific hemispheric brain regions.

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