Exploring the relationship between anosognosia, self-memory and metacognition in Alzheimer’s disease.

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Patients with Alzheimer’s disease (AD) show impaired self-awareness (i.e. anosognosia) and altered metacognition processes.

Anosognosia could be considered as a metacognitive disorder according to cognitive theories.

Interaction between self and memory (i.e. self reference effect, SRE) is disrupted in AD.

Relationship between anosognosia and metacognition processes for self-related memories in AD?

Introduction

Methods

Participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>Healthy controls (HC)</th>
<th>Alzheimer patients (AD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (M/F)</td>
<td>20 (10/10)</td>
<td>20 (10/10)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>75.6 (7.1)</td>
<td>78.1 (8.1)</td>
</tr>
<tr>
<td>Education</td>
<td>11.3 (3.3)</td>
<td>11.2 (3.8)</td>
</tr>
<tr>
<td>Mattis scores</td>
<td>137.8 (4.2)</td>
<td>126.8 (4.9)**</td>
</tr>
<tr>
<td>MMSE scores</td>
<td>/</td>
<td>25.2 (2.0)</td>
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</tbody>
</table>

Cognitive paradigm

- *Does the face fit with name? Why?*
- *Could you recognize her name among three proposals?*
- *Are you rather certain or uncertain of your answer?*

Measures of online metacognitive monitoring:

- **FOK**: Feeling-of-knowing
- **JOC**: Judgment-of-confidence

(Nelson & Narens, Metamory theoretical framework, 1990)

Anosognosia assessment:

- Anosognosia Questionnaire-Dementia (AQ-D)
- Memory Functioning Scale (MFS-MARS)

Results

Anosognosia

<table>
<thead>
<tr>
<th>Measures of online metacognitive monitoring:</th>
<th>Healthy controls (HC)</th>
<th>Alzheimer patients (AD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFS-MARS Corrected</td>
<td>-0.7(17)</td>
<td>.32 (.37)*</td>
</tr>
<tr>
<td>AQ-D Total</td>
<td>-3.20 (10.96)</td>
<td>11.10 (13.41)*</td>
</tr>
<tr>
<td>AQ-D Intellectual</td>
<td>-3.35 (9.89)</td>
<td>8.10 (10.84)*</td>
</tr>
<tr>
<td>AQ-D Behavior</td>
<td>.15 (2.50)</td>
<td>3.00 (3.77)*</td>
</tr>
</tbody>
</table>

SRE on retrieval performance

Overconfidence (JOC-b) for self and other items

Overconfidence for self-related items and anosognosia in AD

Conclusion

- AD patients showed decreased SRE on retrieval of episodic memories. However, in metacognitive measures, a (mild) influence of SRE can only be observed on overconfidence judgments.

  ➔ No global alteration of self-related metacognition processes in AD patients

- Anosognosia for behavioral dysfunctions was only associated with overconfidence for false self-related memories in AD patients

  ➔ Anosognosia in AD is not related to a global alteration of metacognition processes for self-related memories

Perspectives

The relationship between anosognosia, self, memory and monitoring processes in Alzheimer’s disease should be considered beyond cognitive theoretical frameworks.

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