Does Regional Amyloid Burden Impact Domain-Specific Cognitive Impairment?

Background

- The presence of amyloid is required for a diagnosis of Alzheimer's disease.
- However, in vivo amyloid burden does not always correlate with the severity of cognitive impairment, especially in more advanced disease.

Methods

- Amyloid PET and cognitive test scores were obtained from the ongoing MK-8931 (APOE ε4) trial of 400 subjects.
- Subjects who met criteria for repeatable battery for the assessment of neuropsychological status (RBANS) Delayed Memory Index < 6 were identified as having memory impairment. PET amyloid positivity was determined by increased amyloid deposits relative to the amyloid-negative region.
- PET positivity was correlated with cognitive total score, by PET, by region.

Results

- The impact of number of additional PET positive regions on RBANS scores was also assessed.

Table 1: Demographics

<table>
<thead>
<tr>
<th>Group</th>
<th>Age (years)</th>
<th>Gender</th>
<th>Education (years)</th>
<th>Amyloid PET Positivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>62.5 ± 7.8</td>
<td>57%</td>
<td>14.5 ± 3.2</td>
<td>75%</td>
</tr>
<tr>
<td>Negative</td>
<td>62.2 ± 8.1</td>
<td>58%</td>
<td>14.6 ± 3.3</td>
<td>70%</td>
</tr>
</tbody>
</table>

- No significant differences in demographic, cognitive total score, by PET, by region.

Conclusions

- Increased amyloid burden predicted worse in vivo amyloid positivity and lower domain-specific cognitive performance.