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2017

Document Version:
Publisher’s PDF, also known as Version of record

Link to publication

Citation for published version (APA):
THE COURSE AND END-POINTS OF ALZHEIMER’S DISEASE ACCORDING TO SOCIODEMOGRAPHIC, APOPROTEIN E GENOTYPE AND COGNITIVE ABILITY

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BACKGROUND
The prognosis of AD might be influenced by many sociodemographic and clinical factors, for example, age at AD diagnosis, sex, APOE genotype, living alone, and cognitive performance. End-points, such as NHP and death, and the associated costs of care, may depend on these patient characteristics. Most earlier studies have investigated the main effects of various critical predictors that could affect the course of AD, but few have analysed potential interactions. This presentation aims to study long-term cognitive outcomes, time to NHP, survival time in NHs, and life expectancy by interactions between the above-mentioned factors in cholinesterase inhibitor (ChEI)-treated AD patients.

METHODS
The Swedish Alzheimer Treatment Study (SATS) is a prospective, observational, multicentre study for the longitudinal evaluation of ChEI therapy in clinical practice. This presentation includes all 224 deceased SATS participants diagnosed with mild-to-moderate AD (MMSE score 10–26 at the initiation of ChEI treatment, i.e., at the time of diagnosis) who were admitted to NHs during the study period. Sociodemographic characteristics, APOE genotype, dates of NHP and death were recorded. Cognitive performance and APOE ε4 carrier were assessed at the start of ChEI therapy (baseline) and semi-annually over 3 years. Chi-square tests (Table 1) were performed to analyse categorical variables. Independent-samples t tests (Table 1) and one-way analysis of variance (ANOVA) with Bonferroni correction (Figures 1–4) were used to compare differences between the means obtained for two and four groups, respectively.

RESULTS
Table 1. Sociodemographic and clinical characteristics by age at AD diagnosis, median cut-off 78 years (n = 224)

<table>
<thead>
<tr>
<th>Age group</th>
<th>n</th>
<th>%</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤77 years</td>
<td>80</td>
<td>36%</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td>&gt;77 years</td>
<td>76</td>
<td>34%</td>
<td>0.907</td>
</tr>
</tbody>
</table>

Age was divided by median cut-off. * 0.01 ≤ p < 0.05, ** 0.001 ≤ p < 0.01, *** p < 0.001.
The solitary-living patients ≥78 years old demonstrated a shorter time to NHP (14.4 ± 7.6 months) than the other groups: ≤77 years old living with family (mean 16.8 ± 10.7 months), ≥78 years old living with family (mean 19.9 ± points); ≤77 years old living alone (18.0 ± 17.9 points) and ≥78 years old living alone (21.1 ± 18.1 points). The solitary-living patients ≥78 years old demonstrated a shorter time to NHP (14.4 ± 7.6 months) than the other groups: ≤77 years old living with family (mean 16.8 ± 10.7 months), ≥78 years old living with family (mean 19.9 ± points); ≤77 years old living alone (18.0 ± 17.9 points) and ≥78 years old living alone (21.1 ± 18.1 points).

Figure 1. Age at AD diagnosis by sex

Figure 2. Age at AD diagnosis by APOE genotype

Figure 3. Time from start of ChEI treatment (AD diagnosis), months

Figure 4. Time in NH (months)

CONCLUSIONS
This study shows that interaction effects between sociodemographic characteristics and clinical factors affect the course and end-points of Alzheimer’s disease (AD). Despite similar cognitive ability at AD diagnosis, younger patients exhibited longer time to nursing home placement (NHP) and lower cognitive status at the time of admission than older individuals. In the ≤77 years old group, a significantly longer survival time in nursing homes (NHs; >5 years), and thereby higher cost of care, might be expected in females, mild AD patients and apolipoprotein E (APOE) 4-carriers. Younger persons with moderate AD showed remarkably low cognitive ability at NHP (mean Mini-Mental State Examination (MMSE) score 12); these individuals might need increased support.

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