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Wattmo, Carina; Londos, Elisabet

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LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Abstract 172

THE INTERACTION EFFECT OF SEX AND APOLIPOPROTEIN E GENOTYPE IN ALZHEIMER'S DISEASE—RATES OF PROGRESSION AND PROGNOSIS

Type: Abstract Submission

Topic: β-Amyloid Diseases: Alzheimer´s Disease (AD), Prodromal AD, Cerebral Amyloid Angiopathy (CAA), Down Syndrome (DS) & Mild Cognitive Impairment (MCI) / Epidemiology and Genetics in Clinical Trials / A5.e sex and gender-specific genotypes

Authors: C. Wattmo, E. Londos; Clinical Memory Research Unit, Department of Clinical Sciences, Malmö, Lund University, Malmö, Sweden

Aims

To investigate the interaction effect of sex and apolipoprotein E (APOE) genotype on long-term cognitive and functional outcomes and survival in Alzheimer's disease (AD).

Methods

The Swedish Alzheimer Treatment Study (SATS) is a prospective, observational, multicentre study in clinical practice involving 999 participants diagnosed with mild-to-moderate AD at the start of cholinesterase inhibitor treatment (time of diagnosis). The patients were evaluated using Alzheimer's Disease Assessment Scale–cognitive subscale (ADAS–cog), Instrumental Activities of Daily Living scale (IADL) and Physical Self-Maintenance Scale (PSMS) at baseline and semi-annually over 3 years, and date of death was recorded for 20 years.

Results

The frequency of APOE ε4-carriers differed between sexes, 60% of males and 73% of females had 1 or 2 alleles ($p<0.001$). The ε4-carriers were younger than non-ε4-carriers at the estimated onset of AD and at diagnosis in both sexes, and younger at death in males. After 3 years, decline in ADAS–cog was faster in both female APOE ε4-carriers, mean (95% confidence interval), 8.2 (6.5–9.8) and non-ε4-carriers 9.4 (6.4–12.3) points, than in male non-ε4-carriers 3.8 (0.9–6.7) points, ($p=0.036$). Functional deterioration was faster in female non-ε4-carriers than in male non-ε4-carriers, IADL: 8.1 (6.8–9.4) vs. 4.9 (3.6–6.2) points ($p=0.007$), and PSMS: 3.8 (3.0–4.7) vs. 2.2 (1.3–3.0) points ($p=0.033$). These differences were not detected among ε4-carriers.

Conclusions

The effect of APOE genotype differed between sexes in AD. Male ε4-carriers showed 2 years earlier death than male non-ε4-carriers. Female non-ε4-carriers demonstrated worse cognitive and functional prognosis than male non-ε4-carriers.

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