

Alzheimer's Disease and AMD May Share a Common Link

Investigators found an association between Alzheimer's disease and the onset of age-related macular degeneration (AMD), according to research presented at the 2007 annual meeting of the Association for Research in Vision and Ophthalmology, held in Fort Lauderdale, Fla.

Researchers from the Center for Preventive Ophthalmology and Biostatistics at the University of Pennsylvania in Philadelphia, sought to estimate the prevalence of AMD among patients diagnosed with mild-to-moderate Alzheimer's disease and compare it to estimates for the general US population.

According to Agnieszka Baumritter, MA, a biostatistician with the center, previous studies have shown that there are similarities between the plaque that develops in the brains of Alzheimer's patients and the chemical beta-amyloid protein that is found in drusen. This suggests that the two conditions share some common pathogenesis.

The investigators recruited 59 of 194 patients with a diagnosis of probable Alzheimer's disease who were receiving care at the Penn Memory Center at the University of Pennsylvania into this cross-sectional pilot study. Certified fundus photographers took fundus photographs of each eye following pupil dilation.

Ms. Baumritter said trained graders at the Scheie Image Reading Center, University of Pennsylvania, evaluated photographs using the International Classification and Grading System for Age-Related Maculopathy as the basis for the grading of drusen and late AMD. Early AMD was defined as ≥ 1 large ($> 125 \mu\text{m}$) drusen in one or both eyes. Late AMD was defined as presence of choroidal neovascularization or geographic atrophy in one or both eyes.



The observed numbers of both early and late AMD were compared to their expected numbers based on US age-, sex-, and race-specific prevalence rates. The standardized ratios and their 95% confidence intervals were calculated by using the Confidence Interval Analysis (CIA) software.

Among 51 (86%) of 59 patients with gradable photographs for at least one eye, 30 (59%) were female, 40 (78%) were white, and the mean age was 75 years with a range of 52 to 91 years. Five (10%) of 51 had late AMD. The standardized ratio of late AMD prevalence in Alzheimer's disease patients was 1.93 (0.63-4.49). Of the remaining 46 patients, 14 (30%) had early AMD with large drusen present in at least one eye.

The standardized ratio of early AMD prevalence in Alzheimer's disease patients was 2.15 (1.18-3.61).

The Penn group concluded that within this group of patients with Alzheimer's disease, the prevalence of early AMD was higher than expected from prevalence rates for the US population.

As this was a pilot study, more research needs to be conducted, Ms. Baumritter said, adding that full blood panels exist for these patients and they will be examined to determine whether there are common elements between patients and their diseases. ■

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