Abstract: 1430

Baseline Predictors Associated with Three-Years Changes in Dark Adaptation in Age-related Macular Degeneration

Deeba Husain, MD
Boston, MA

Ines Laines, MD, Archana Nigalye, MD, Raviv Katz, BS, Demetrios G. Vavvas, MD, PhD, Ivana Kim, MD, Joan W. Miller, MD, John Brown Miller, MD

Purpose:

Dark-adaptation (DA) has been recognized as an important functional measure in age-related macular degeneration (AMD), but limited data is available on its progression over time. This study aimed to assess the relationship between baseline AMD stage and optical coherence tomography (OCT) features and three-year changes in DA, in a cohort of patients with AMD and a control group.

Methods:

Prospective, longitudinal study of patients with AMD and a comparison group (> 50 years) without any vitreoretinal disease. At baseline and three years later, both eyes of all participants were imaged with color fundus photographs (CFP) and spectral-domain OCT, and were tested with the AdaptDx® DA extended protocol (20 minutes). Two independent graders evaluated the obtained CFP for AMD staging (AREDS classification), and the OCT B-scans for the presence of several AMD-associated abnormalities. Multilevel mixed effect models (accounting for correlated outcomes between 2 eyes) were used for analyses

Results:

We included 31 eyes (n=21 subjects), 54.8% (n=17) with AMD, and the remainder belonging to the comparison group. Accounting for age, baseline AMD stage was significantly associated with worsening of RIT at three years (p= 0.019); this was primarily due to a difference between patients with intermediate AMD and controls. Among the baseline OCT parameters evaluated, the presence of ellipsoid disruption was statistically significantly associated with worsening of RIT at three years, when accounting for age and baseline AMD stage (p= 0.001).

Conclusions:

Our results suggest a significant association between baseline AMD stage and OCT characteristics, with changes in time to dark-adapt at three years. This work supports the role of dark adaptation as a useful measure in AMD outcomes.