

Evaluation of the macula pigment optical density by a psychophysical test in dry age-related macular degeneration

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Purpose

To evaluate the macular pigment optical density (MPOD) in dry age-related macular degeneration (AMD).

Methods

This prospective study included 68 dry AMD patients and, as the control group, 91 healthy volunteers. Age, gender, family history, smoking, alcohol, hypertension, hyperlipidemia, height, weight, dietary lutein intake, and use of lutein-zeaxanthin (L-Z) were questioned. Full ophthalmic examination was performed. Color fundus photography and fundus autofluorescence (FAF) images were recorded. MPOD was measured by color perimetry (CP) every 3 months for 9 months in the dry AMD group, and 1 time at the beginning of the study in the control group. 6 mg/day lutein or 10 mg/day L and 2 mg/day Z were started in non-users.

Results

Smoking, obesity, family history, light iris color, and hyperlipidemia were seen more frequently in the AMD group. Average MPOD values in the AMD group were; 3.69 ± 1.82 (baseline), 4.74 ± 1.29 (3rd month), 4.99 ± 1.27 (6th month), and 5.02 ± 1.35 (9th month) dB, respectively. In the control group, the average MPOD was 4.97 ± 1.27 dB. At the baseline, the MPOD of the AMD group was significantly lower than the control group. Smoking, obesity, poor dietary lutein intake, light iris color, and hyperlipidemia were associated with low MPOD.

Discussion

The relationship between MPOD and AMD is controversial in the literature. Low MPOD and AMD may be related depending on our results. Quit smoking, and having a rich dietary L-Z intake are important for preventing AMD progression. The results of the CP are consistent with the other psychophysical tests.

