

Chapter 73

Nonexudative Age-Related Macular Degeneration

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73.1 Definitions

- Age-related macular degeneration (AMD)
- Geographic atrophy (GA)
- Reticular pseudodrusen (RPD)

73.2 Symptoms

Gradual vision loss (central vision), distorted vision, or blurred vision

73.3 Signs

- Early: Appearance of few drusen and/or RPD, disruption of retinal pigment epithelium (Fig. 73.1a)
- Intermediate: Appearance of numerous drusen and/or RPD, GA not involving the central macula
- Late: Appearance of numerous drusen and/or RPD, GA in the central macula

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Fig. 73.1 Fundus photo showing multiple drusen in the macula along with mild mottling of the RPE (a). OCT showing drusen with absence of macular fluid (b)

73.4 Epidemiology

- Nonexudative AMD is believed to account for 80–90 % of all AMD cases.
- In Caucasian people over 40, the prevalence of early AMD is estimated at 6.8 %; late AMD is at 1.5 %.
- Occurrence of AMD is nine to ten times more common in a white population compared to a black population.

73.5 Predisposing Conditions

- Advanced age
- History of smoking
- Genetic inheritance
- White race
- Obesity
- Hypertension
- Hypercholesterolemia

73.6 Inheritance

AMD involves the inheritance of multiple heterogeneous phenotypes. It has been reported that polymorphisms in complement factor H, complement factor B, and C2 genes may be responsible for 75 % of cases of AMD. Twin studies and familial analyses have provided clear evidence of the heritability of AMD, but further research is required to elucidate the genetic roots of the disease.

73.7 Differential Diagnosis

Drusen, Central serous retinopathy, Myopic degeneration, Stargardt disease, Pattern dystrophy, Inherited retinal dystrophy

73.8 Workup/Testing

- Complete ocular examination with Amsler grid testing documentation and dilated fundus examination
- Optical coherence tomography (Fig. 73.1b)
- Color fundus photography
- Fundus autofluorescence
- Fluorescein angiography (consider when exam/testing concerning for exudative process)

73.9 Prognosis and Management

Individuals with intermediate dry AMD or advanced dry AMD or wet AMD in the other eye should have dietary supplementation with AREDS vitamins, which have been shown to provide some benefit in slowing the progression to advanced AMD in about 25 % of patients. Additionally, several clinical trials are underway targeting various pathways for the treatment/prevention of dry AMD.

73.10 Follow-Up

Recommended follow-up is every 6–12 months. Patient should be instructed to check their Amsler grid daily in each eye and report any changes immediately.

References and Suggested Reading

1. Age-Related Eye Disease Study 2 Research Group. Lutein + zeaxanthin and omega-3 fatty acids for age-related macular degeneration: the Age-Related Eye Disease Study 2 (AREDS2) randomized clinical trial. *JAMA*. 2013;309(19):2005–15.
2. Jager RD, et al. Age-related macular degeneration. *N Engl J Med*. 2008;358(24):2606–17.
3. Lim LS, et al. Age-related macular degeneration. *Lancet*. 2012;379(9827):1728–38.