Age-Related Macular Degeneration

Age-related macular degeneration (AMD) is a leading cause of severe vision impairment among white Americans.[131] In 2004, it was estimated that approximately 1.75 million people aged 40 years or older in the United States have either neovascular AMD or geographic atrophy in at least one eye and that 7.3 million have high-risk features, such as large drusen (≥125 μm), in one or both eyes.[131] A report published in JAMA Ophthalmology in 2011 notes that the prevalence of any AMD in the 2005–2008 National Health and Nutrition Examination Survey was 6.5%, which is lower than the 9.4% prevalence reported in the 1988–1994 Third National Health and Nutrition Examination Survey. Overall, these estimates show a decreasing incidence of AMD.[132] The prevalence, incidence, and progression of AMD and most associated features (e.g., large drusen) increase significantly with age.[123, 124, 131] For example, the prevalence of AMD in white females 60 to 64 is 0.3%, increasing to 16.4% in those 80 and older.[131] Age-related macular degeneration is usually asymptomatic in its early stages, although a fundus examination is helpful in identifying patients with an increased risk of developing choroidal neovascularization or advanced AMD.[128] The Age Related Eye Disease Study (AREDS) defined a role for nutritional supplements for slowing the progression of AMD. It is important to identify those patients at higher risk because the AREDS2 supplement formulation (i.e., vitamin C, vitamin E, zinc, copper, lutein, zeaxanthin) has been shown to have preventive efficacy in this higher-risk group.[133] An estimated 8 million persons at least 55 years old in the United States have monocular or binocular intermediate AMD or monocular advanced AMD. They should be considered to be at high risk for progression of advanced AMD and are the population for whom the AREDS2 formulation should be considered. If all the patients at risk were given supplements, then more than 300,000 could delay disease progression and associated vision loss.[133]

Cigarette smoking has been consistently identified in numerous studies as a risk factor for progression of AMD, and the risk increases relative to the number of pack-years smoked.[134-141] Smoking-cessation counseling may influence patients to stop smoking, reducing the risk of AMD progression. Patients with neovascular AMD report a substantial decline in their quality of life and have an increased need for assistance with activities of daily living that progresses as visual acuity worsens.[142] Early treatment of AMD is associated with a more favorable prognosis.[143] Anti-vascular endothelial growth factor (VEGF) treatment given within 2 years after diagnosis of neovascular AMD in non-Hispanic white patients has been shown to reduce legal blindness and visual impairment.[144] It is important to note that since the registration trials for the currently approved anti-VEGF medications, the standard of care is to treat neovascular AMD as soon as diagnosis has been made. Because early symptoms may be subtle, a comprehensive eye examination may represent a patient's best opportunity to be diagnosed and treated at an earlier and potentially more favorable stage.

Cataract

Cataract remains a significant cause of visual disability in the United States, accounting for approximately 50% of low-vision cases in adults over 40.[145] Cataract is the leading cause of treatable blindness among Americans of African descent who are 40 years of age and older, and it is the leading cause of low vision among individuals of African, Hispanic/Latino, and European descent.[31] Because smoking increases the risk of cataract progression,[146, 147] informing smokers about this and other associated ocular and systemic diseases may influence them to stop smoking.

Other Ocular Disorders

Other examples of high-risk conditions or diseases that necessitate a medical eye examination include a history of ocular trauma or the presence of abnormalities of the anterior segment, such as corneal ectasia, corneal dystrophies, or peripheral anterior synechiae. Conditions that increase the risk of OAG (e.g., exfoliation syndrome and pigment dispersion syndrome) and angle-closure glaucoma (narrow anterior chamber angle) should also be evaluated. High myopia and abnormalities of the posterior segment, such as retinal tears or retinal degenerations