

Age-Related Macular Degeneration Awareness

February is age-related macular degeneration (AMD) awareness month. AMD is a leading cause of central vision loss in the 50+ age group. It accounts for 14 percent of new legal blindness, with 16,000 cases reported annually in the United States. Currently, 34% of the US population is over the age of 50. As the Baby Boomer generation continues to age and this percentage continues to rise, we will continue to see a drastic rise in age-related diseases, with the most notable eye disease being AMD. AMD has a dramatic impact on the elderly in terms of daily living and overall quality of life. Not only are visual impairments associated with difficulty with activities of daily living, but also with increased risk of depression and accidental injury

There are two types of AMD: the dry form and the wet form. The vast majority of patients with AMD have the atrophic form (dry form), commonly presenting with drusen and retinal pigment epithelial (RPE) atrophic changes of the central macula. Although the atrophic form of the disease is much more prevalent, the largest numbers of patients that develop severe visual loss have the exudative form (wet form) of AMD. The transition from dry to wet AMD is marked by neovascular changes in the retina.

The identification of modifiable risk factors and the development of future preventive treatments are crucial for dry AMD because there is currently no available treatment. The current therapy of dry AMD includes vitamin supplementation to reduce

progression, patient education with overall risk assessment, avoidance of cigarette smoking, regular follow-up examinations, and home monitoring by the patient for new metamorphopsia or scotoma with the aid of an Amsler grid. Many studies have determined that smoking significantly increases the risk of AMD. Smoking is the largest modifiable risk factor for age-related macular degeneration.

The Age-Related Eye Disease Study (AREDS) first showed that increased intake of antioxidants and zinc lowered the risk for disease progression by 25% in patients with intermediate or advanced AMD. Regarding adverse effects, subsequent research from AREDS found an increased incidence of genitourinary disorders associated with high-dose zinc supplementation. AREDS 2 with modified the dose of Zinc showed that taking the following nutritional supplements every day might help to slow the disease in some people with early to mid-stage AMD. Vitamin C (500 mg), Vitamin E (400 IU), Lutein (10 mg), Zeaxanthin (2 mg), Zinc (80 mg), Copper (2 mg).

Over the past 15 years, anti-vascular endothelial growth factor (VEGF) agents have profoundly transformed the management of AMD and remarkable improvements in vision preservation and quality of life for millions of patients in the United States. Anti-VEGF intravitreal injection is the first-line treatment of wet AMD because these agents have been shown to improve visual and anatomic outcomes over other therapies. Currently

there are four anti-VEGF agents clinically approved by the FDA. In a 2018 survey among the American Society for Retinal Specialists, the first-line agent of US retinal specialists for wet AMD was bevacizumab (70.2%), followed by aflibercept (16.4%), and ranibizumab (12.8%). The FDA approved brolicizumab recently as a new treatment option. Retinal specialists need access to different anti-VEGF agents to individualize therapy. Although they may be clinically equivalent in large-scale clinical trials, patients may respond differently to specific anti-VEGF agents.

In summary, visual impairment from AMD is increasing in the United States. It is important to discern general vision loss from AMD to ensure proper follow-up. Additionally, early detection of dry AMD allows for preventative measures to be taken, such as dietary and lifestyle changes. While there is a genetic component to the progression of AMD, many risk factors are modifiable. Anti-VEGF intravitreal injections are an effective treatment for wet AMD. Substantial research efforts continue in the identification and evaluation of new therapeutic modalities for both forms of this disease.

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