AMD – How to Improve Outcomes and Help Prevent Blindness

Continuing Education Exam

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1) The prevalence of age-related macular degeneration (AMD) in patients over the age of 75 in the United States is approximately:
    a. 1 in 2
    b. 1 in 3
    c. 1 in 5
    d. 1 in 10

2) A recent study in JAMA Ophthalmology demonstrated that AMD is commonly missed in primary eye care clinics. In patients deemed to be "normal," what percentage had features of AMD that were detected by fundus photography?
    a. 10%
    b. 25%
    c. 50%
    d. 75%

3) According to the Beckman Committee classification scale, intermediate AMD is defined as:
    a. Medium-sized drusen
    b. Drusen associated with RPE changes
    c. Any large drusen in the macula
    d. B and C are correct
    e. All the above

4) If a patient has a few large drusen and RPE changes in both eyes, what is the approximate 5-year risk of progression to advanced AMD?
    a. 5%
    b. 25%
    c. 50%
    d. Nearly 100%

5) What of the following is considered the strongest modifiable risk factor for the development and progression of AMD?
    a. High dietary Omega-3 intake
    b. Cigarette smoking
    c. Age
    d. Low macular pigment density

6) In early AMD, which symptom is most common?

a. Difficulty with night vision
b. Decreased reading speed
c. Color vision changes
d. Glare

7) In AMD, extracellular deposits that form between Bruch's membrane and the RPE leads to impaired dark adaptation by causing a localized deficiency in what vitamin?
    a. Vitamin A
    b. Vitamin C
    c. Vitamin D
    d. Vitamin E

8) Which of the following is considered the most sensitive and specific way to diagnose early AMD?
    a. Color vision testing
    b. Microperimetry
    c. Visual acuity
    d. Dark adaptometry

9) In AMD, supplemental carotenoids are thought to lower progression risk by:
    a. Upregulating depleted VEGF levels
    b. Reducing oxidative stress
    c. Increasing retinal blow flow
    d. All the above

10) According to a recent publication by Seddon, et al., the effectiveness of antioxidant and zinc supplementation in patients with AMD is influenced by:
    a. Genotype
    b. Phenotype
    c. Patient smoking history
    d. Patient age

11) Which statement best describes the proposed mechanism of photobiomodulation (PBM) therapy in AMD?
    a. It increases RPE autofluorescence to improve drusen resorption
    b. It delivers specific wavelengths of red to near-infrared light to enhance mitochondrial function and reduce oxidative stress in retinal cells
    c. It stimulates VEGF production to promote choroidal perfusion in areas of geographic atrophy
    d. It uses ultraviolet light to induce controlled RPE apoptosis and stimulate regenerative repair

12) Which statement is TRUE regarding ForeseeHome preferential hyperacuity perimetry for AMD monitoring?

a. It is designed to detect changes in best-corrective visual acuity to identify conversion to geographic atrophy
b. It requires monthly in-office calibration to maintain accuracy
c. It is primarily used to monitor progression of reticular pseudodrusen
d. It allows home monitoring to detect subtle metamorphopsia earlier, potentially improving early detection of conversion to exudative AMD

13) Which of the following Is TRUE regarding reticular pseudodrusen (subretinal drusenoid deposits) in AMD?
a. They are located beneath the RPE and best detected on fluorescein angiography
b. They are associated with a *lower* risk of progression to late AMD compared to typical drusen
c. They represent deposits located *above* the RPE in the subretinal space and are linked to increased risk of advanced AMD
d. They are typically hyper-reflective on near-infrared imaging and rarely seen on OCT

14) Which best describes the mechanism of complement inhibitors used to treat geographic atrophy?
a. They suppress VEGF production to prevent choroidal neovascularization
b. They block C3 or C5 activation to reduce inflammation and RPE damage
c. They increase photoreceptor regeneration by stimulating Muller cell transdifferentiation
d. They enhance RPE phagocytosis to improve drusen clearance

15) According to data from the IRIS registry, the mean visual acuity in newly diagnosed exudative AMD patients in the United States is:
a. 20/25
b. 20/40
c. 20/80
d. 20/200

16) In AREDS2, reducing zinc levels from 80 mg to 25 mg demonstrated:
a. No meaning difference in AMD progression outcomes
b. Increased conversion to advanced disease
c. Decreased conversion to advanced disease
d. Decreased conversion to advanced disease but only with when combined with supplemental meso-zeaxanthin

17) Metformin use in patients with diabetes may lower risk of AMD development by:
a. Improving blood glucose control
b. Providing an anti-inflammatory and anti-angiogenic effect on the retina
c. Upregulating vitamin A synthesis in RPE cells
d. Lowering systemic C-reactive protein levels

18) Non-exudative choroidal neovascularization is typically detected by what imaging technology?

a. Fundus autofluorescence
b. Fluorescein angiography
c. Optical coherence tomography angiography (OCT-A)
d. Near-infrared reflectance

19) In a recent post-hoc analysis, researchers determined that AREDS2 supplements may be helpful in patients with geographic atrophy (GA) by:
a. Slowing progression of non-central GA lesions
b. Slowing progression of central GA lesions
c. Slowing progression of all GA lesions
d. Slowing conversion to exudative CNV specifically in patients receiving complement inhibition therapy

20) Which of the following changes in the AREDS2 formulation was made to improve safety and maintain efficacy in reducing progression to advanced AMD?
a. Addition of beta-carotene to further reduce GA progression
b. Replace of beta-carotene with lutein and zeaxanthin due to lung cancer risk in smokers
c. Removal of copper to reduce toxicity when combined with zinc
d. Doubling the dose of vitamin E to enhance antioxidant effects