

Improving Patient Management in AMD Treatment

Advanced diagnostic and imaging tools facilitate early disease recognition.

BY PAUL GARFINKLE, MD

Patients are becoming increasingly aware of age-related macular degeneration (AMD) through affected family members and personal experiences, as well as through increased media coverage due to the growing prevalence of the disease. This awareness has been a driving force in the development of new therapies and technologies to improve their care.

Our understanding of AMD's epidemiology has also grown considerably over the years. With that increased knowledge, we have gained the ability to help our patients prevent both the atrophic nonexudative (dry) AMD and conversion to exudative (wet) AMD. Through risk identification, behavior modification, and nutritional supplementation, our patients have more control over their ocular health than ever before. Even with this improved understanding of AMD risk modification, however, it is inevitable that preventive measures will not work for all patients. Despite the best efforts to prevent conversion, some of our patients will progress to exudative AMD and require treatment. Although this is an unfortunate reality, we have an increasing number of tools at our disposal to improve treatment success.

EFFECTIVE MONITORING OF THE DISEASE

Choosing the best therapy protocols for your practice and each patient is imperative. With drugs that inhibit vascular endothelial growth factor (VEGF), we have the ability to truly help many of our AMD patients gain better visual acuity. However, implementing treatment in a timely manner is just as important in order to obtain the best outcomes. As retinal spe-

cialists, our ability to provide patients with treatment at the optimal time can depend on several factors, including proper referral timing, accurate reporting of symptoms by the patient, and meticulous at-home and in-office monitoring protocols to identify conversion early. All of the above issues—and more—can affect our ability to apply treatment as early as possible.

The Amsler grid has long been the basis of AMD monitoring both in-office and at home. However, new technologies now allow us to provide more accurate and in-depth monitoring capabilities to our patients. The Amsler grid's benefits and weaknesses lie in its simplicity. It is easy to use and an inexpensive way to monitor AMD. It has low sensitivity scores, however, and when used for at-home monitoring, patient compliance becomes a concern.^{1,2} My practice has implemented several technologies additive to our use of the Amsler grid that have improved our ability to enhance treatment success through timelier implementation.

Preferential Hyperacuity Perimetry (Foresee PHP; Sightpath Medical, Bloomington, MN) is one tool we use in my office regularly to monitor at-risk patients for conversion. Based on hyperacuity, the test can identify subtle changes in the macular field that affect the ability to perceive minute differences in the alignment of visual stimuli. The PHP technology offers greater sensitivity and specificity than the Amsler Grid and can also compensate for limitations of the Amsler grid such as completion, fixation and crowding.^{1,3} The test has also been shown to differentiate between intermediate dry AMD and wet AMD.⁵ Often, patients are referred to us for treatment of CNV in one eye while the fellow eye

PAIRING TECHNOLOGIES IMPROVES TREATMENT SUCCESS

By pairing technologies such as the PHP, OCT and fluorescein angiography I was able to provide successful treatment early and maintain my patient's vision.

•Patient history. This patient is a 66-year-old white woman who had been receiving treatment for wet AMD in her left eye. Her medical history included hypertension and high cholesterol. She also had moderate cataracts in both eyes. Although the fellow eye was asymptomatic, we wanted to monitor it closely so as to identify conversion should she progress.

• Discussion. To monitor the fellow eye for CNV we used the Foresee PHP. Her first PHP result indicated an abnormality; however, upon follow-up with the OCT no edema was identified (Figures 1 and 2). We placed her on a quarterly PHP monitoring protocol due to the high risk of conversion in the fellow eye. Although her second visit indicated no abnormalities, on her third quarterly visit the Foresee PHP identified suspected CNV (Figure 3). We then confirmed conversion with an OCT evaluation that showed subretinal fluid accumulation (Figure 4). The fluorescein also indicated advanced AMD (Figure 5).

She has received three injections of bevacizumab (Avastin, Genentech, Inc.) and seen some improvement in her vision. Had the Foresee PHP not indicated an abnormal result, the progression of her condition may have gone unnoticed until functional changes in her vision took place. Though confirmation of wet AMD took nearly 6 months, the continued monitoring and follow-up with OCT and FA gave us the ability to identify CNV and implement treatment in a timely manner, which ultimately saved and improved her vision.

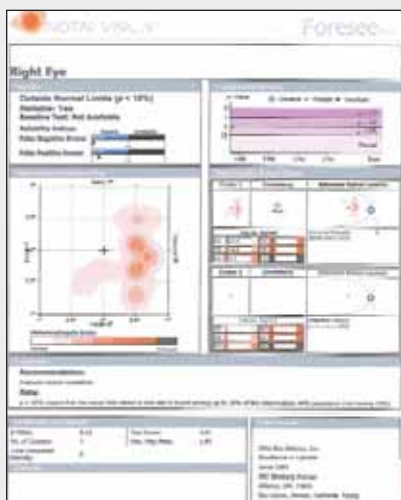


Figure 1. The patient's first PHP test indicates an abnormality.

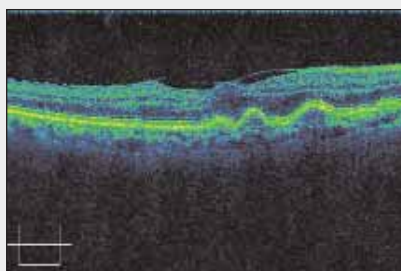


Figure 2. OCT shows no edema.

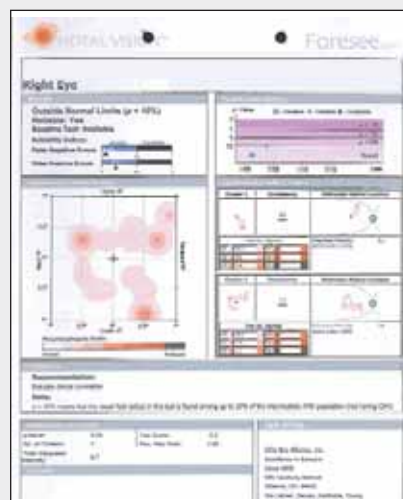


Figure 3. PHP indicates possible CNV.

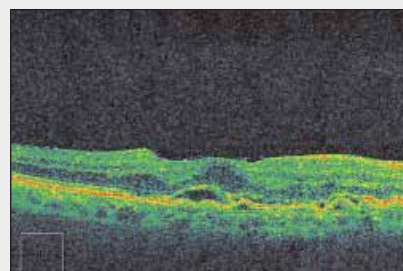


Figure 4. Subretinal fluid accumulation is confirmed by OCT.

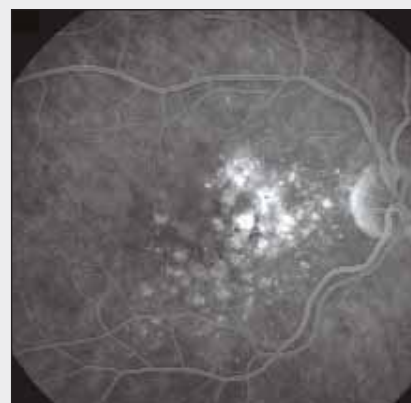


Figure 5. Fluorescein indicates advanced AMD.

has only small drusen. Because of the likelihood that the fellow eye will convert, PHP technology has become essential in monitoring these high-risk patients.

After the PHP technology indicates an abnormality, we follow up with optical coherence tomography (Cirrus Spectral Domain HD-OCT; Carl Zeiss Meditec, Dublin, CA) The OCT takes cross-sectional images of

the retina and allows us to identify subtle areas of change within the macula. Its ability to indicate slight accumulations of fluid is essential in confirming the presence of CNV. Additionally, when patients are unable to accurately describe their symptoms, the device can help us determine exactly what they are experiencing and locate the pathology. The OCT imaging has come a long way over the years and is now offered in several models by several manufacturers in various price ranges and levels of image clarity.

Finally, one of the most beneficial tools developed for retinal diagnosis is the fluorescein angiogram (FA). This diagnostic test has become widely used because of its ability to provide information about the condition of the back of the eye and the circulation within the eye. For our patients with AMD, it is particularly useful in confirming the presence of CNV. The fluorescein dye injected into the bloodstream collects in areas of leakage due to CNV and appears highlighted in the photographic results.

Combining the PHP technology, OCT, and FA helps practitioners to more accurately identify progression to CNV, implement treatment in a timely fashion and provide patients with confidence in their ocular care (see accompanying case study).

Our knowledge of and ability to manage AMD have come a long way in recent years. Treatment success is greatly improved through better therapeutic options and monitoring capabilities. With improved education, patients are maintaining their vision far longer than ever before. Until there is an absolute cure for this disease, however, these improvements must continue. We owe it to our patients to improve their knowledge of AMD as well as our referral processes, therapeutic offerings and office technologies so they can obtain the best visual outcomes possible. ■

Paul Garfinkle, MD, is a retina and comprehensive ophthalmologist at Ohio EyeAlliance. He has experience in the diagnosis and treatment of medical retinal disease, age-related macular degeneration, and small incision cataract surgery. He states that he has no financial interest in the companies or products mentioned. He may be reached at eyedoc7@neo.rr.com



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