Curbing Our Enthusiasm for Telemedicine and Deciding on Treatments During COVID-19

COVID-19 has changed the way we think about telemedicine and treatment decisions. Is retina ready for telemedicine? How much have treatment decisions actually changed?

BY DAVID A. EICHENBAUM, MD

Some of the foreseen promises of telehealth have come to fruition in the past several years. Patients have shown that they sometimes prefer the convenience of telehealth consultations for routine matters handled by their primary care provider and selected specialists. A prescription for a round of antibiotics for a common infection, for example, might be acquired via a telehealth visit. What works in general medicine, however, may or may not translate to surgical specialties.

In some instances, telemedicine can provide convenience without sacrificing the quality of care. A patient consulting with a cardiologist to review data (test results, lifestyle, various metrics) that will inform a decision whether or not to initiate statin therapy, for example, is an effective use of telemedicine, particularly because the physician does not require a physical examination to make that decision.

Because so many decisions in retina practice are informed by imaging and physical examination, and because we do not yet have commercial access to at-home imaging platforms, I believe that retina and telemedicine are not yet fully ready for each other.

LIMITATIONS OF AT-HOME EVALUATION IN NEOVASCULAR AMD

During the COVID-19 pandemic, many retina clinics have forgone retinal imaging for patients scheduled to receive anti-VEGF therapy for neovascular age-related macular degeneration (AMD), particularly if the patient's history is long enough that a response pattern can be established. By skipping imaging and providing an injection-only visit at the most recent fluid-free interval, retina specialists spared these neovascular AMD patients from exposure to staff members and equipment surfaces, mitigating the risk of disease spread by minimizing the number of potential infection points.

These efforts should be applauded, as they provided the proper amount of care tailored to this medical

AT A GLANCE

- Although telemedicine has been shown to be effective in other areas of health care, the unique dynamics of retina care require in-office examination.
- At-home diagnostics will be foundational technology in the potential expansion of telemedicine in retina.
- Extended-duration steroid therapy may provide a convenient bridge treatment for diabetic macular edema patients who have been requiring frequent anti-VEGF injections.

THERE IS GREAT PROMISE FOR TELEMEDICINE IN RETINA, BUT UNTIL HOME DIAGNOSTICS ARE VALIDATED AND APPROVED FOR COMMERCIAL MARKETING AND AVAILABLE IN PATIENT'S HOMES, SAFE AND EFFECTIVE RETINA THERAPY WILL REQUIRE IN-OFFICE EVALUATION AND MANAGEMENT.

environment. Given that many practices already employed injection-only visits for selected patients, we have been able to use that blueprint for how these visits can be modified to fit the moment. The only risk to this approach during the pandemic is a temporary compromise of individualized extension intervals, which is a minimal risk in the COVID-19 ecosystem.

Relying largely on telehealth to determine if a patient staying at home requires an intravitreal injection requires us to rely on subjective acuity data, because that is the only data that patients may be able to provide (that is, the patient's estimate of how vision has improved, stabilized, or worsened). Given that no modern clinical trial has used patient-gathered visual acuity as a primary or secondary endpoint, and that no patient can acquire imaging data to inform a treatment decision, it would be essentially impossible to make a reliable determination of the need for treatment via telemedicine.

Eligibility for extension of treatment interval in a neovascular AMD treat-and-extend regimen is determined by the presence of exudative activity on OCT or hemorrhage on exam. Here, too, we cannot get any information via telehealth to make a determination on whether a patient's treatment interval can be extended.

Consider a patient who reports a red eye after an injection. A telehealth appointment—even one in which high-definition video is used to examine the patient—would not provide the information needed to determine if the patient's condition is due to an abrasion, uveitis, high IOP, endophthalmitis, or something unrelated to an injection or surgical procedure. Similarly, we lack in-home tonometry or OCT to gather data in these situations.

There is great promise for telemedicine in retina, but until home diagnostics are validated and approved for commercial marketing and available in patient's homes, safe and effective retina therapy will require in-office evaluation and management.

DECIDING ON DIABETES TREATMENT

The homogeneous nature of neovascular AMD allows us to make some generalized statements regarding treatment during the COVID-19 era. When we consider patients with diabetic eye disease, however, there are important differences in the manifestations of disease that may influence treatment decisions in this climate.

Take, for example, a patient receiving treatment for severe nonproliferative diabetic retinopathy (DR). If this patient forgoes treatment for 8 weeks, he or she will probably be fine. The same could be said for deferring a patient with potentially sight-altering diabetic macular edema (DME) for 4 to 8 weeks.

For patients with proliferative DR (PDR), treatment interruptions pose a risk for a significant and long-lasting vision-threatening complications such as a vitreous hemorrhage. Binocular patients may be able to tolerate a PDR event in one eye, but monocular patients with PDR are at the highest risk for a substantial alteration in independence and livelihood if treatment is interrupted, as even transient vision loss secondary to a hemorrhage would result in de facto blindness until the hemorrhage clears or the patient undergoes vitrectomy.

Patients with DME whose disease is managed with anti-VEGF therapy present an interesting scenario during the era of social distancing. These patients, particularly if they are receiving frequent treatment (ie, every 4 or 6 weeks), could potentially benefit from a single dose of the dexamethasone intravitreal implant 0.7 mg (Ozurdex, Allergan). This could obviate the need for injections for 3 to 4 months. Initial intravitreal steroid use appropriately mandates an IOP check at approximately 6 to 8 weeks after the injection, but that short office visit would require contact with the physician only if IOP measurements are high.

Retina specialists with concerns about an increased risk for cataract development in phakic patients after steroid exposure may find solace in data from the MEAD trial,

which reported that "longer exposure to repeat [dexamethasone intravitreal implant 0.7 mg] was associated with an increase in cataract development or progression in phakic eyes."[1] A single Ozurdex dose, in the MEAD population, did not significantly increase the risk of cataract development in this trial. In other words, if a physician uses a single dexamethasone intravitreal implant 0.7 mg as bridge therapy during the COVID-19 era in a patient with DME, the risk for that patient of developing a cataract is not high.

Considering one-time sustained-release steroid therapy in pseudophakic patients who normally undergo anti-VEGF therapy is an easier decision. Because the risk of cataract development is off the table, the chief factor to consider is glaucoma risk.

THE FUTURE

Telemedicine may become more applicable to retina practice in the near future. Availability of home-based imaging platforms could make remote treatment decisions easier and more reliable. Publicly-based ophthalmic imaging platforms (akin to automated blood pressure cuffs found in pharmacies) that rely on artificial intelligence software to interpret images could alert retina specialists to new or worsening pathology, and those images could allow doctors to begin analyzing patient data before the patient presents to the office. Until then, our field is wise to continue to use the reliable, validated, clinic-based imaging platforms we have at our disposal.

In the same way that we have to use the technologies familiar to us while we weather the storm, we must consider the potential short-term advantages of all of the treatment options we have at our disposal. ■

1. Boyer DS, Yoon YH, Belfort R Jr, et al; Ozurdex MEAD Study Group. Three-year, randomized, sham-controlled trial of dexamethasone intravitreal implant in patients with diabetic macular edema. *Ophthalmology*. 2014;121(10):1904-1914.

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