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Time Is Vision: Early Recognition and Management of Neovascular AMD and RVO

Announcer:
Welcome to CME on ReachMD. This activity is part of a special series titled “Time is Vision in Neovascular Age-Related Macular Degeneration and Retinal Vein Occlusion” and is provided in partnership with the National Eye Institute of the National Institutes of Health, of the U.S. Department of Health and Human Services, along with Prova Education. It’s supported by an independent educational grant from Regeneron Pharmaceuticals. To view this activity or others in the series, please visit EyeHealthAcademy.org/TimeIsVision

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Dr. Ip:
For patients with retinal vein occlusion and exudative age-related macular degeneration, time is vison. So what are the key components to successfully recognizing early neovascular age-related macular degeneration and retinal vein occlusion?

This is CME on ReachMD. I’m Dr. Michael Ip, and joining me for today’s discussion is Dr. Christina Weng.

Dr. Weng:
Thanks for having me today, Mike. As you alluded to, early diagnosis of neovascular AMD and retinal vein occlusion are really critical because the vision loss that can ensue from these diseases really can have a detrimental impact on our patients’ lives. There are nearly 4 million people in the United States living with neovascular AMD and retinal vein occlusion, and that number is only anticipated to grow with the aging population.

So let’s focus first on neovascular AMD. Mike, what can you tell us about the risk factors for progression, and is there anything we can do to modify those?

Dr. Ip:
So initially, the AREDS [Age-Related Eye Disease Study] group published a complicated severity scale of logistic regression of non-exudative age-related macular degeneration. And this was subsequently published into a simplified severity scale for detecting eyes that are at risk for the development of exudative age-related macular degeneration. And it was simply an evaluation of drusen in one or both eyes and an evaluation of pigmentary changes in one or both eyes, such that the more of these risk factors, the higher the risk of developing exudative age-related macular degeneration. So as a quick example, a patient who has bilateral drusen and bilateral pigmentary changes would have 4 of these risk factors and, therefore, an almost 50% chance of developing exudative age-related macular degeneration in the next several years.

Now, to the point of detecting conversion to exudative age-related macular degeneration earlier, there are a number of devices that have been looked at and that are currently being looked at to help patients in the home setting to detect these conversions. So as a quick example, the ForeseeHome study, which was an ancillary study to the AREDS2 clinical trial, showed that patients had a much better chance of having good visual acuity – of having a conversion detected while having good visual acuity.

Dr. Weng:
Well, thanks for that summary, Mike. You know, I’m going to switch gears here and focus more on timing now of initiation of treatment. So when you look at all of the major AMD studies like ANCHOR, MARINA, CATT, HARBOR, it becomes clear that there are two main factors that predict how a patient is going to do visually following treatment. And the first is initial visual acuity; the second is their

baseline lesion size. And both of those generally correlate with timing of diagnosis so that the earlier the patient's diagnosis is made, the better their visual acuity outcomes tend to be. And this is really highlighted in the slide that I've included from the CATT trial. What this is showing here are the patients stratified by initial visual acuity level. And you can see that patients – essentially, if you started with better visual acuity, then their visual acuity outcomes were better at both the 1-year and the 2-year time points. But unfortunately, we know from this as well as other real-world studies, that only about a third of patients actually fall into that top category where they're coming in with visual acuity of 20/40 or better.

And so why is this important? Well, because we're at a different time than we were 20 years ago when it comes to treatment in neovascular AMD. We have very effective anti-VEGF intravitreal injections to offer patients these days. And so the question becomes how can we do better? One of those ways is with new therapeutics that work better and last longer, and there are several of those in the developmental pipeline that are being investigated. But the other, really, is earlier diagnosis and detection of disease. And so as you've mentioned already, regular exams, home monitoring, and even exciting new technologies like home OCT [optical coherence tomography], I think these can really move the needle for us in terms of early detection.

Dr. Ip:
Great. That was an excellent summary of that point. I would please ask you now to go to your case where I think some of these points can be highlighted, Christina.

Dr. Weng:
Sure, thank you, Mike. So my case is a 72-year-old Caucasian male. He's actually a retired surgical oncologist. He came to me after he noted trouble reading with his right eye for approximately 2 weeks. He's otherwise healthy, nonsmoker. You can see that his visual acuity is quite good in the right eye; it's 20/25+1 and 20/20 in the left. Slit-lamp examination was only remarkable for very mild cataracts, which I didn't feel accounted for his symptoms. Dilated examination showed medium-sized drusen and a very shallow layer of subretinal fluid without hemorrhage in the right eye. And this was confirmed on spectral domain OCT. And so this, of course, is consistent with the diagnosis and conversion to exudative or neovascular AMD in the right eye. His left eye had no fluid, but he did have the criteria that allowed us to make a diagnosis of intermediate non-neovascular AMD in his left eye. And of course he was started on AREDS vitamin supplementation. I want to really focus, though, on treatment for his right eye. So you can see on the top left, that's the original slab OCT from his original presentation. He's 20/25+1 with that layer of subretinal fluid. I initiated anti-VEGF therapy with aflibercept and gave him 3 monthly doses to which he responded wonderfully.

So really just highlighting some takeaways here from this case and emphasizing, again, our whole point, which is that early detection and treatment of exudative AMD increases the probability that good visual acuity will be retained for the patient, that the dilated exam and OCT should always be performed together in any patient where exudative AMD is suspected. But of course, again, I want to just emphasize that early treatment with anti-VEGF intravitreal injections is really key in preserving vision for neovascular AMD patients.

To learn more about anti-VEGF intravitreal therapy for neovascular AMD, as well as for retinal vein occlusion, please visit EyeHealthAcademy.org/TimeIsVision.

Dr. Ip:
For those just tuning in, this is CME on ReachMD. I'm Dr. Michael Ip and today, Dr. Christina Weng and I will discuss how to improve early diagnosis and referral of patients with exudative age-related macular degeneration and retinal vein occlusion.

All right. I think that was a great discussion, Christina, and I would say let's turn our focus now to retinal vein occlusion. And retinal vein occlusion is slightly different than age-related macular degeneration in that it's a more acute disease. There isn't a real monitoring phase before the onset of visual acuity loss, so the patients tend not to have so much knowledge of the disease. They don't seem to have so much anxiety about this because it just kind of comes out of nowhere for most of them. But a lot of what we discussed in terms of early identification, diagnosis, and management I think still applies to this to this condition.

So let's discuss central retinal vein occlusion now in terms of some of the data that we have that alludes to superior outcomes with earlier identification and management. So this was from the CRUISE clinical trial looking at ranibizumab for central retinal vein occlusion. And you can see that the placebo or the observation group just doesn't really do as well as the treated groups out to month 6. And then when therapy is initiated in the control group, PRN starting at month 6, we see that the placebo group just doesn't really catch up to the groups that were originally assigned to receive ranibizumab. Some of this may be because the initiation of that therapy was actually PRN and not monthly, but a large part of this is likely due to the delay in therapy for the placebo-treated group out to month 6.

So, Christina, I'd just like to know what your thoughts are on this particular slide. Are there any other data out there that supports this contention of "time is vison" when it comes to treatment of macular edema from central retinal vein occlusion?

Dr. Weng:
Retinal vein occlusion is a common retinal vascular disease, like neovascular AMD, but one thing that's really different about it, as you said earlier, is that we don't perform regular surveillance for this condition because there's not really a consistent and reliable ophthalmic precursor in most cases, and so the diagnosis of CRVO and BRVO really is a clinical one. And therefore, it's important for the provider to have this diagnosis at top of mind and to know those specific findings to look for, like a distinct pattern of intraretinal hemorrhages, cotton wool spots, tortuous and dilated retinal veins, cystoid macular edema, and sometimes even optic disc edema. And, you know, some patients do present with mild or transient symptoms, but in my experience, the vast majority of them have an acute and noticeable change in their visual acuity. And so if a patient presents in that way, definitely RVO is a diagnosis that should be kept in mind.

Dr. Ip:
Yes. Agree with that completely. And what you just said there just segues perfectly into this case. You can see there's a relatively younger male patient who has bipolar disorder, anxiety. He's on several medications for this, and he presents with good Snellen visual acuity to the eye clinic. And then you can see a little bit of disc swelling, some intraretinal hemorrhages in all 4 quadrants. And then when we forward over to the actual ultrawide field fluorescein, you can see that there are the obvious signs of an early retinal vein occlusion. And then when we move to the OCT scan, you can see a relatively normal foveal architecture. We don't see a lot of middle retinal ischemia, we don't see any central subfield thickening, and the visual acuity is good.

And so in this situation, Christina, as opposed to the patient with the very early exudative age-related macular degeneration that you presented, you know, do we have to jump on anti-VEGF therapy as quickly for this very early retinal vein occlusion?

Dr. Weng:
Well, thanks for sharing that case, Mike. I think it's a really interesting point that you make, and I think you're right that with RVO, we do have a little bit more time than, say, for neovascular AMD. It's – I don't want to say less time-sensitive, because we still need to watch these patients closely, but it's not always necessarily as urgent. And so in a patient without macular edema at presentation and good visual acuity, as you've shown, I'd probably watch that patient very closely. I still think that the potential for developing cystoid macular edema and neovascular complications is real, and so the patient should be receiving continued and regular examinations for that. The one thing that I would recommend to the patient is for them to visit with their primary care physician because we know that systemic cardiovascular risk factors, like hypertension and diabetes, can increase the risk for RVO occurring – or recurrent RVO occurring in this patient. So I would ask them to visit with their physician to make sure that their cardiovascular system is also optimized.

Dr. Ip:
Well, I think that concludes our discussion on both of these diseases. One last thing, Christina. Let me give you a chance to wrap this up by giving everybody a few take-home points from this discussion.

Dr. Weng:
Absolutely, Mike. Well, again, thanks for having me, and, you know, my final takeaway would be referring back to the title of our session, that with neovascular AMD and RVO, "Time Is Vision." Early detection of these diseases allows for early initiation of treatment and optimization of the outcomes for our patients. And we as ophthalmologists and retina specialists really can facilitate this early detection through careful examinations, knowing what signs to look out for when we perform those dilated exams, and also leveraging our imaging technologies like OCT, OCTA [OCT angiography], and FA [fluorescein angiography], and, of course, educating our patients on what symptoms to look out for.

How about you, Mike? What's your final takeaway?

Dr. Ip:
It's an amazing time that we live in right now, that we have all of these tools in our armamentarium to make sure that we can give these patients optimal outcomes with early detection, right? We have multiple anti-VEGF agents. We have amazing imaging technologies that can view pathology much better than we can at the slit lamp. And we have devices and tools now to send patients home and they can help us in detecting their disease early. So it's an amazing time that we have all of this, and I think it's just a great time to be a retinal specialist treating patients.

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