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### On the Frontline of Diabetic Retinopathy: Assessment of High-Risk Patient Populations

Announcer: This activity is provided in partnership with the National Eye Institute, of the National Institutes of Health, of the US Department of Health and Human Services. The National Eye Health Education Program of the NEI is acknowledged for its important contributions to this initiative.

Dr. Peters: Unfortunately, disparities in the prevalence of diabetes exist among certain ethnic and socioeconomic groups that, in turn, place these individuals at higher risk for developing vision-threatening complications. So how can we, as endocrinologists and primary care providers, work together with our eye care counterparts to actively refer and optimize vision outcomes for our highest risk patients with diabetes who are at the greatest risk for diabetic retinopathy and diabetic macular edema? Welcome to CME on Reach MD. I'm Dr. Ann Peters, calling in from Los Angeles, California, and joining me today are Dr. Thomas Gardner in Ann Arbor, Michigan, and Dr. Diana Sheckman in Miami, Florida.

Dr. Sheckman: Thank you for having me.

Dr. Gardner: Thank you, Dr. Peters. It's a pleasure to be with you.

Dr. Peters: We know that there's a higher prevalence of diabetes among individuals who are of Native-American, African-American, and Hispanic descent, and since socioeconomic status also plays a role in the risk for diabetes, Dr. Sheckman, how does all of this then translate to the risk of diabetic retinopathy?

Dr. Sheckman: Well, diabetes is what I call a head-to-toe disease affecting both the macro and microvasculature; hence, affecting the heart, the brain, the retina. Some of the worst patients that I have seen with diabetic retinopathy or some of the worst diabetic retinopathy I have seen, usually has a huge impact on patients who are African-American or Hispanic. These are young, working individuals, lower socioeconomics, and it's really hard for them to actually get assessment – accessibility to some eye care providers; hence, they usually come in with very severe disease, and we know that early diagnosis really leads to prompt referral and better treatment. So, it's incredibly important to educate these patients and get them to the eye care provider as soon as possible.

Dr. Peters: So, those were some great points. As a provider, I find it very discouraging when I get a patient with "new onset, type 2 diabetes" who already has established retinopathy. So, I think all of us need to work to identify patients at risk for diabetes and get them into care sooner and make sure that they don't develop retinopathy to begin with. But let's talk about a case that is similar to many of the cases that I've seen over the years, which is a 48-year-old, African-American woman who basically presents with new onset, type 2 diabetes. She is a patient who has not been able to get medical care for several years and she has been seen, her A1c is 11.2%, her blood pressure is 150/95, her LDL is 185, her HDL is 40, and her total cholesterol is 240. So, Dr. Gardner, looking at this patient, what are the factors that place her at very high risk for having diabetic retinopathy?

Dr. Gardner: Right. Well, all those factors you mentioned, Dr. Peters, starting with her ethnic background, unfortunately, African-Americans and Latinos are at higher risk of not only getting diabetes but getting complications from their diabetes and the individual factors you mentioned, such as her blood pressure and her dyslipidemia and her markedly elevated hemoglobin A1c, suggest that she's – are risk factors for her having eye and other complications. And it would also suggest, if her A1c is that high, that she's probably had

her diabetes for a number of years but, unfortunately, it was not diagnosed because of her lack of healthcare access.

Dr. Peters: Well, those are great points, Dr. Gardner, and this is a patient where you kind of want to fix everything all at once, but I also say that from a realistic perspective, doing things in a stepwise fashion is very important, and one of those first steps for this patient, I believe, is making sure they're evaluated for the presence of diabetic retinopathy. So, turning back to you, Dr. Sheckman, when there's a patient like this with newly diagnosed type-2 diabetes, we know the guidelines recommend a comprehensive dilated eye exam at the time of diagnosis. From your perspective as an optometrist, how can you work together with endocrinologists and primary care providers to help ensure that these patients receive a comprehensive eye exam.

Dr. Sheckman: That's a great point, we know about 50% of patients don't actually get the eye care they need. I think a couple of things that we can do is have flexible hours, evening hours, weekend hours – that really helps. Communication, I think is key. Anytime we see a patient, this information needs to be communicated back to the endocrinologist and primary care physician, and the whole entire diabetic team. And among another thing that I have found useful is for primary care physicians to give us a list of the patients, so we also become a point to try – another touch point to try to get these patients on board to get an appointment. Can't leave all the information to the patient to make sure that they get the eye care they need, so it allows us to call the patient and set up appointments as well.

Dr. Peters: Those are great points and I definitely think we need to work together to ensure that our patients make that first contact and go in for their initial diabetic eye exam. For those of you just tuning in, you're listening to Reach MD. I'm Dr. Ann Peters and here with me are Drs. Thomas Gardner and Diana Sheckman to talk about how we can better manage our patients with diabetes who are at high risk for diabetic retinopathy and diabetic macular edema. Earlier, we talked about just how important it is that our patients have access to healthcare providers. And with that being said, Dr. Gardner, what are your thoughts on how we can increase screening for diabetic retinopathy in our endocrinology and primary care setting?

Dr. Gardner: Right, so the early detection of diabetic eye disease is – presents some unique challenges because it can't usually be done by the primary care physician or endocrinologist office personnel. However, fundus photography certainly works if it's implemented across a scale and if it's well-standardized, and if there's a well-established system for evaluating the resulting photographs, and then, most importantly, getting patients back for their eye exams if they've been found to have some problem.

Dr. Peters: Great answer, so Dr. Sheckman, what are your thoughts on the same topic?

Dr. Sheckman: I think that retinal cameras can really be useful, especially allowing for those patients who don't have accessibility to get some sort of screening. One of the key things that I think's important to truly understand that any retinal imaging, whether it be a retinal camera, a wide field, or whatever would be used, does not substitute for a comprehensive dilated examination.

Dr. Peters: I would say, from my perspective as an endocrinologist, that I love it when eye care professionals send retinal images along with their notes. I show those images to my patient to reinforce what's going on with their vision and also discuss their overall health and what steps, like lifestyle change and medication, we can take to help them protect their vision. In thinking about our patient case, that's exactly what I would do here, because in her case, she did actually go see the optometrist at the time of diagnosis. Her vision was good, 20/20 and 20/25, but she was diagnosed as having moderate, nonproliferative diabetic retinopathy in her left eye. She was told to follow up with another eye exam in six months. However, nine months go by and the patient has not yet returned for follow up because her vision "seems okay." At this point, I would really be encouraging her to return for a follow-up visit, but also trying to find out what barriers she faced with regards to following through on the recommendation, so I can help her make her appointment. Dr. Gardner, what strategies or messages do you use to convince patients who have diabetes and good visual acuity that they need to continue having dilated eye exams?

Dr. Gardner: Right. Well, Dr. Peters, you raised a really important question because these patients are so overwhelmed by all the visits they have to make to different doctors and all the costs of that and the time it takes, it's a real challenge. Nationally, it's recognized that at least half of patients who are known to have vision-threatening retinopathy do not follow up, at some point, for their continued treatments. But I think the best we can do, in general, is to be as positive as we can – every member of their team – about how their disease is treatable, it's not fatal, they are usually not going to go blind.

Dr. Peters: Those are very good points, and you know the family member part is really important because many times other family members have diabetes and some might not even know they have it. So, now returning to our case, Dr. Sheckman, we finally convinced her to return for another eye exam, perhaps to your office. Can you tell us more about the patient now?

Dr. Sheckman: Certainly, the visual acuity upon coming in – best corrected visual acuity was 20/25 for the right eye, 20/40 for the left. Interesting, the OCT showed retinal thickening center involved for the right eye, whose best corrected visual acuity was 20/25. The left eye showed some findings consistent with a more severe stage of the disease where there was a number of different dot-blot

hemorrhages in all four quadrants as well as venous beading which really signifies decreased perfusion; that's how the veins will interact, given the sausage-like appearances. And I think one of the things that you mentioned in regards to photography here I think becomes really important, particularly on the eye that's 20/25, the patient is completely asymptomatic, but by showing them the photos, the OTC and helping them understand what is happening in the back of the eye, you make them a part of the management plan. So I think that is really critical in this perspective at hand.

Dr. Peters: I totally agree. I think a picture's worth a thousand words. So, Dr. Gardner, what are your thoughts about when patients should be referred to a retinal specialist for care?

Dr. Gardner: Right, well currently, if they're, if they're – have symptomatic vision loss, then they should see an ophthalmologist, preferably a retinal specialist, but many general ophthalmologists actually are pretty good at taking care of people with diabetic retinopathy. And if they've been identified in screening or other examinations to have more than mild-to-moderate retinopathy, then they should also see a retina specialist. Part of this is because sometimes the examination, even in our hands, misses some early neovascularization things so it really takes careful scrutiny to be sure the patients don't have latent high-risk retinopathy.

Dr. Peters: Dr. Gardner, could you teach us a little bit about the data regarding treatment of diabetic eye disease?

Dr. Gardner: So the – yes, so first of all, diabetic macular edema means when the center of the retina, the macula, is abnormally thickened. And, for the past decade, quite a few studies have looked at the effects of various anti-VEGF medications that are injected inside the eye at various stages of severity of retinopathy overall and of the macular edema. And, basically, these studies have repeatedly confirmed that the anti-VEGF agents are better than laser treatment and they're certainly better than the natural history. So the way clinicians continue to think about this is evolving. In general, there is probably an increasing trend treating earlier stage disease before people get a lot of macular edema, or neovascularization. However, I would say it's still very patient-dependent – in other words, the whole patient, not just their retinopathy picture.

Dr. Peters: Well, yes, I think there's so many things to deal with in particularly like a patient that we're discussing. But I always feel like it's incumbent upon me to really encourage patients to keep going and making sure they do it because it's much better to have these treatments than, you know, frankly, to have deterioration in one's vision. So, Dr. Shectman, when do you refer patients to a retinal specialist for care? What's your paradigm for doing this?

Dr. Shectman: Well, in essence, I work at a retinal clinic. I usually see these patients coming in – I think one of the key things is whenever a doctor feels uncomfortable, they should certainly seek a second opinion, especially if you don't have the right diagnostic modalities. Another reasoning is often times these disease are under staged, if you will. I've seen cases whereby they look like mild diabetic ret; we get an ultra-wide imaging, an ultra-wide FA, and we identify the patient actually had or severely-decreased perfusion out in the periphery, so I think by the time it goes from a moderate to severe stage, the patient should seek a second opinion, or the optometrist should seek a second opinion from a retinal specialist. In addition, whenever there is involvement of diabetic macular edema, even if it's center involved, I still – with good visual acuity – I still think that they should get a second opinion from a retinal specialist because there's still a paradigm shift right now with a different change, whereby one doctor may potentially be treating that individual because of the severity of the diabetic ret, or somebody else may be watched or monitored. So, we're still trying to gage the better understanding of how anti-VEGF works in some of these cases at hand.

Dr. Peters: I agree with you entirely. I think that that's a really good response and I think we're all a part of the team. And, again, I think your recommendation probably holds a lot of weight with your patients and you can encourage them to follow through as they need to. So, as a wrap-up, what are the takeaway messages you'd like to share with our colleagues? Dr. Gardner let's start with you.

Dr. Gardner: Yes, well a takeaway message is it's never too late to get your diabetes and blood pressure controlled, and if you do that, we all work together as a team, you'll keep your vision.

Dr. Peters: I like that, and how about you, Dr. Shectman?

Dr. Shectman: I think one of the most important things we have to understand is we have to definitely not be afraid of getting a second opinion, from either the ophthalmologist or the retinal specialist. And the two main points I want to bring up is educate – what I would consider to be the ABCs – the A1c control, the blood pressure, as well as cholesterol, and the important aspect of communicate – communicating with the whole entire diabetic team.

I agree 100%. It's so important to remember that we need to actively support our patients with diabetes, as well as each other as professional colleagues. And I want to thank my guests for joining me to remind us of that. Dr. Shectman, Dr. Gardner, it was great speaking with you both today.

Dr. Shectman: Thank you for having us.

Dr. Gardner: Thank you, Dr. Peters and Dr. Sheckman.