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In Plain Sight: Evaluating All Patients with Diabetes for Diabetic Retinopathy

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. Clayton: We know that assertive action is needed when it comes to protecting the vision of our patients with diabetes, but how can we, as providers, work better together to ensure to optimize the iHealth and minimize the risk of vision loss from diabetic retinopathy and diabetic macular edema.

Welcome to CME on ReachMD. I am Dr. Janine Austin Clayton, Associate Director for Research on Women's Health and Director of the Office of Research on Women's Health at the National Institutes of Health. With me today, is Dr. Paul Chous, joining us from Tacoma, Washington, and Dr. Anne Peters, joining us from Los Angeles, California.

Dr. Peters: It's great to be here.

Dr. Chous: I'm really honored to be here with Dr. Peters.

Dr. Clayton: Dr. Peters, can you describe the recommendations for assessing vision and ocular health in patients with diabetes?

Dr. Peters: So, the recommendations for screening for patients who have diabetes are basically to do so annually. Now there are certain caveats to this. So, when a patient first comes in with type 2 diabetes, you start screening right away and do that annually and make sure that they're followed appropriately. If a patient has type 1 diabetes, they say that you can wait for a few years before you start screening, but I see a lot of patients with adult onset patients with type 1 diabetes and I start their screening right away. And the reason to start their screening right away, in my mind, is twofold. One, with adults, we don't know how long they've actually been having hyperglycemia, and, secondly, I think it's actually a good thing to get people into the habit of having annual screening.

Dr. Clayton: Dr. Chous, what information can we gain from a dilated eye exam?

Dr. Chous: We know that diabetic retinopathy is highly connected to other microvascular diseases, including kidney disease, neuropathy as well as periodontal disease for instance. Really, you know, the dilated exam is kind of a fourth diabetes centered vital sign for patients with diabetes along with glycemic control, cardiovascular status, and neurological status. And dilation is particularly important because it allows us to see more of the inside of the eye which is really important for accurately staging the severity of somebody's diabetic retinopathy. The other thing is that it allows an eye care provider to assess the retina stereoscopically. That means we can see the retina, the depth of the retina and that's really important for things like diabetic macular edema, which is the leading cause of vision loss in diabetes as well as glaucoma which is about 50% more prevalent in patients that have diabetes.

Dr. Clayton: Unfortunately, we know that 30 to 40% of individuals are not undergoing routine eye exams and up to half of patients diagnosed with diabetic macular edema are not receiving regularly dilated exams. We know that patients with diabetes are 21 times more likely to suffer severe vision loss when compared to their age matched peers. Dr. Peters, what can we as providers do to improve our patient's access to vision screening?

Dr. Peters: So, first of all, we have to understand a patient perspective and, in many cases, they may not notice that they're having any changes in their vision and they may already feel overburdened. So, many of these people, when I think about it I'm referring them say to a cardiologist and to a nephrologist and to a podiatrist and to all sorts of other places and, oh yes, you've got to go get your eyes examined. I think it's easy to not be able to prioritize, as a patient, to say well, I'll do this and this, but maybe not this, because there are a lot of things. Then people have issues with accessing healthcare. They may have co-pays that are expensive, they may have to find time away from work or child care, or all sorts of things. So, I think one of the things we can do is A., help patients prioritize the need to go see somebody to check their eyes and, what I'll do often when I see a patient who hasn't gone in for their retinal screening, is I'll say this is the one thing I want you to do between now and the next time I see you, can you make a commitment to doing it, so I work with the patients to make that part of their treatment goals. The other thing is, is that in some places they do have retinal screening with retinal cameras. Now, this doesn't test in our older patients for all the kinds of eye diseases they can have, but I find it useful to get the eye photos and then to discuss the findings with the patient and then help them use that again to encourage them to follow up with appropriate eye care.

Dr. Clayton: Dr. Chous, what are your thoughts in how we can improve our patient's access to vision screening?

Dr. Chous: One is that I think primary care physicians and endocrinologists, it would be a good idea to partner with an eye care provider in their community and, you know, work closely with that provider that maybe has extended hours after work, or on Saturdays and Sundays. Optometrists, in particular, see a lot of patients on the weekends when perhaps maybe many ophthalmologists are not seeing patients, so that's one strategy. Retinal imaging is no doubt going to play an increasingly larger role

Dr. Clayton: So, along with the use of retinal imaging, it is important for providers to understand the progression of diabetic retinopathy and diabetic macular edema. Dr. Chous, can you describe that progression for us?

Dr. Chous: So, diabetic retinopathy, without delving too deep into the weeds of pathophysiology, chronic hyperglycemia damages the capillary endothelial cells throughout the body. Actually, it kills off the pericytes, which are found on all microvascular endothelial cells and, in the retina, that leads to microaneurysm formation. That in of itself can cause fluid leakage within the macula, the part of the retina responsible for detailed vision and color vision, but, in addition, with chronic hyperglycemia, you get capillary closure and that leads to ischemia hypoxia and release of vasoproliferative factors like VEGF that can lead to the growth of new abnormal blood vessels on the surface of the retina that can detach the retina resulting in vitreous hemorrhage and cause severe vision loss. So, it's important for primary care providers, internal medicine docs, and endocrinologists to refer patients hopefully before they have any visual symptoms. If you wait for symptoms, you're really treating the disease too late. And the other thing just to be aware of is that the major reason people with diabetes don't see well is not diabetic retinopathy, it's an eye glass prescription that's outdated or hyperglycemia leading to cataracts.

Dr. Clayton: Dr. Chous, can you describe the treatments that are available today for patients with diabetic macular edema and diabetic retinopathy?

Dr. Chous: So, we have a number of treatments for diabetic retinopathy and the mainstay for a long time has been pan retinal photocoagulation for proliferative diabetic retinopathy and then macular photocoagulation for diabetic macular edema. In addition though, we have other drugs or other agents that are helpful for treating retinopathy including anti-VEGF injections. We have three available agents, two of which are approved for use in the eye, that's Aflibercept and Ranibizumab, and also corticosteroids have a place in treating patients with diabetic macular edema. We have new data coming out of a number of trials including the Pan_____ 10:25 trial using a Aflibercept that shows if you treat patients before they develop proliferative diabetic retinopathy, so when they have non-proliferative disease, either moderate severity or severe non-proliferative retinopathy, you can actually prevent those patients from developing sight-threatening complications of diabetic retinopathy. Things like anterior segment neovascularization, which leads to neovascular glaucoma and diabetic macular edema and proliferative retinopathy. So, the paradigm is shifting to earlier treatment with these anti-VEGF agents.

Dr. Clayton: Dr. Peters, we know that comorbid conditions like hypertension, dyslipidemia, and nephropathy contribute to the progression of diabetic retinopathy and diabetic macular edema. How can we help our patients to better manage these conditions to optimize their eye health?

Dr. Peters: Well, so basically everything that's good for a patient overall is good for their eyes. I use often the findings from the eye exams to help motivate a patient, so if a patient has had an A1c that is higher than we'd like, I use the motivation of saying this will improve your eyes to get your blood sugars better and it can help improve your prognosis in the long run. There is a problem though of bringing people's A1c down too quickly. So, sometimes patients will have a high A1c of 10 or 11% and you get it down to 7% in a short period of time and their eyes can actually worsen. Now, we found that overall that doesn't worsen their long-term vision, but you need to make sure that if a patient has suddenly decided to get their A1c a lot better that you make sure they go and get their eyes checked just

to be sure there is not a transient worsening.

Dr. Chous: A little addendum to Dr. Peters' excellent commentary about how to control or lower the risk of diabetic retinopathy, it is important for clinicians, all of us, to remember that what a patient's hemoglobin A1c is now doesn't reflect what it may have been for many years prior to getting good glycemic control in the here and now. So, often times, patients come in with reasonably good blood glucose control now but they've got terrible diabetic retinopathy and a lot of that is a function of time but also poor glycemic control in the past. The other thing that we know is increasingly, the literature is saying, it's increasingly relevant to developing severe diabetic retinopathy in sleep disordered breathing, so, obstructive sleep apnea. The evidence says that patients with untreated obstructive sleep apnea are between five and seven times more likely to develop either diabetic macular edema or proliferative diabetic retinopathy. So, I think it's really important that all of us be evaluating our patients with diabetes for sleep disorder breathing.

Dr. Clayton: What strategies have you found to be effective in strengthening communications with different providers and working together for the care of their patients? Dr. Chous?

Dr. Chous: So, I hear from providers all the time, including my own endocrinologist, I'm not getting the reports back from eye care providers. So, it's important for those of us in eye care to really stress to our colleagues if you're going to see a patient with diabetes, you need to send a timely report letting the PCP or endocrinologist know the patient's ocular status. So, in a round table meeting I had with the American Diabetes Association, a scientific meeting a few years ago, I sat down with a group of ten endocrinologists and I said what do you want in a report from eye care providers and what I got back surprised me. The most important thing they told me was to not use abbreviations with which maybe non-ophthalmic providers are not as familiar. So, spell out what the diagnosis is. Nonproliferative diabetic retinopathy, for instance, rather than the acronym NPDR. The other thing was that they wanted the communications to be brief, cut to the point, let the physician know what the surveillance interval is, that is, when does the patient need another dilated eye exam and, if the patient requires treatment, to whom are they being referred and how soon.

Dr. Clayton: Dr. Peters, same question. What strategies do you have for strengthening communication among providers to make sure that our patients are getting their dilated eye exams?

Dr. Peters: So, not only do I want reports that I can understand and, frankly, I can't understand most of the reports I get back from an eye care specialist, I like two things. I like pictures because if I have the retinal photos that somehow I've gotten, even if it's in black and white, I can use it to teach the patient because I can show them those photos and that I understand them and that I am interested. And then I need some sort of, I don't know, more subjective sense from the eye care professional as to what they really feel. Like are you really worried about this patient, should I express worry to this patient, what's the true follow up, should I encourage the patient to go back every month, should they be going every year, I need to really feel like I can say the same thing as the eye care professional, that we're both on the same page and, a lot of the times, the reports are sort of abstract and, frankly, they're cookie cutter, and I don't get a sense of what I'm really supposed to be saying to the patient. So, I think this really is about communication. If I know the person that is seeing my patient, so if I have a personal relationship with the optometrist or the ophthalmologist, that always helps because then I can kind of vouch for the situation and say no, I really trust their judgement, this really is what you need. But, I think all of us need to encourage patients and, frankly, it's scary to face this, it's scary to go get treatment for eye disease that you may not really be feeling, but I think it's really incumbent upon us to be a team and then, obviously, make the patient the head of the team so we can work with them to get the care they need.

Dr. Chous: The other thing is eye care providers often don't get reports back from the primary care physician or the endocrinologist about what the patient's individualized metabolic targets are. So, as an eye doctor, I want to know if the endocrinologist has recommended a given patient, you know, should have less rigorous glycemic control so that I'm on the same page so that we are mutually reinforcing messages. So, I would encourage providers that provide diabetes care to try to communicate with the eye doctor about what their goals are so that we can help you do your job better when we talk to patients.

Dr. Peters: I think that's an incredibly good point because nothing frustrates me more than having discordance between me and the eye doctor.

Dr. Clayton: That's great. And wrapping up our discussion, what are the key action items that we need to take going forward to make sure our patients get the best care possible?

Dr. Peters: Obviously we need to refer patients annually to make sure that they're seen. But, more than that, in each chart note, each time I see a patient, I record the date of their last eye exam and then every single visit I make sure that I've said out loud to the patient, gee, you're last exam was in April, next April you need to go, or reaffirm it so that they always have in mind that we're taking time to really look at what is the annual test, when is it due, and make sure patients go. I think we also need to use retinal cameras in certain settings where it is easier for the patient where it helps us get data that we might not get if we simply refer a patient and then they don't

end of going. And, I think, obviously, patient education is really important here. But, all that we're talking about is in the service of educating the patient, of helping them understand their role in this and how they can improve their eye health.

Dr. Chous: Well, I think we just need to not be lulled asleep by somebody's current metabolic control. If it's excellent now, it doesn't mean it's always been excellent. And, as I said before, many patients come in with relatively good blood glucose control and still have sight-threatening diabetic retinopathy. Really time is the enemy, the longer somebody's had diabetes, the higher the risk. And then I think it's really important to reinforce the benefit of early detection and appropriate treatment of diabetic retinopathy and diabetic macular edema because we simply get better outcomes; we preserve patient's vision longer.

Dr. Clayton: Those are all really important points that we should remember so that we can take the best care of our patients with diabetes. I want to thank Drs. Paul Chous and Anne Peters for joining me today.

Dr. Peters: Thank you for having us.

Dr. Chous: Thank you. It's been a pleasure.