Transcript Details

This is a transcript of a continuing medical education (CME) activity. Additional media formats for the activity and full activity details (including sponsor and supporter, disclosures, and instructions for claiming credit) are available by visiting: https://reachmd.com/national-eye-institute/nei-blindness-prevention-initiative/best-practices-for-managing-diabetic-retinopathy-improving-your-care-plans-today/10902/

Released: 09/15/2019
Valid until: 12/31/2020
Time needed to complete: 15 Minutes

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Best Practices for Managing Diabetic Retinopathy: Improving Your Care Plans Today

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. Dunbar: This is CME on ReachMD. My name is Dr. Mark Dunbar, and I practice at the Bascom Palmer Eye Institute in Miami, Florida, and I'm joined today with Dr. Diana Shechtman, who is an optometrist at a retina practice here in South Florida. Diana and I are going to talk about a couple cases relating to diabetes. I think we recognize that there's been a paradigm shift in how we manage and treat diabetes. There's a lot of interesting things going on with regards to when we should refer, when is the best time to treat these patients, and so the hope is that Diana and I are going to have a discussion on, you know, a couple cases and when that is probably the best time to do it and provide an update. Welcome, Diana.

Dr. Shechtman: Thank you.

Dr. Dunbar: So, Diana, let's discuss one of these patients. Here's a 58-year-old Hispanic female who has type 1 diabetes since age 11. She's had a heart transplant in 2016 and has chronic kidney disease relating to her diabetes. Her blood sugar is not well controlled. As you can see, her hemoglobin A1c is in that, you know, 11 to 12 range, which is really a formula for disaster in many ways.

Dr. Shechtman: Interesting enough, her fasting blood sugar is only 114, which goes about the importance of obviously always asking about A1c in addition to a fasting blood sugar.

Dr. Dunbar: Now, whenever I see a patient like this with that type of blood sugar, I always, you're kind of afraid of what you're going to see in the back of the eye, and actually when you look at her, her retinopathy isn't too bad. Obviously, you can see some exudate in the macula of the left eye. There's some kind of microaneurysms that you can see in the right eye, and so I guess categorization, Diana, how would you categorize this patient?

Dr. Shechtman: Honestly, anywhere between a mild to moderate, at best. As you mentioned, there's some hemorrhages there, there's a couple of retinal hemes, some exudates. I am a little bit concerned about the left eye, and the macula does look a little bit cloudy, particularly in the superior aspect.

Dr. Dunbar: Let me give you a closer view of both the right and the left eye, and I wonder if that helps at all.

Dr. Shechtman: Oh, definitely. So, you can certainly see just as you alluded to, but the key thing that I'm most concerned about at this point is the fact is that there are some exudates and a little bit of cloudiness on the superior aspect of that macula.

DUNBAR: So, the question is, does she have macular edema or not? So, why don't you tell me how you kind of look at that patient and how you grade a patient like this.

Dr. Shechtman: Well, oftentimes, the evaluation with a 90D lens behind a slit lamp I think is the most critical thing. I do it, everything,

very systematic. I start in the optic nerve, evaluate the macula, vasculature, and get out to the periphery. With that stated, the minute I start seeing exudates, microaneurysm, I start thinking there's leakage somewhere involved in the central aspect, and certainly we have the ability to do OCT and FA if necessary. Here, you can see the exudates on the superior aspect, and in addition, too, you see a little bit of cloudiness, particularly in comparison to the other eye on the superior, so I would bet that doing an OCT on this patient, we'd certainly have some macular edema there.

Dr. Dunbar: In the era of OCT, we're able to really see the retinal thickening, we're able to see, you know, the architectural changes within the retina. Now, you know, you look at this OCT, and on one of the slide scans, it's pretty flat. On the other one, you can see some early cystic change on that vertical cut, but also on the thickness map, you can see that there's some also thickening. So, kind of, how do we categorize, or how do we look at diabetic macular edema today compared to when we were using ETDRS categorization?

Dr. Shechtman: I think that's a great question. First and foremost, you can always see activity of the disease by looking at this raggedy or spongy-like appearance, but I will look at any increased thickening. Then, I try to make a determination. Is it within the central area, or is it right outside the central area?

Dr. Shechtman: I think you have an excellent slide representing what we would consider center-involved. The macular edema is within the center aspect versus non-center-involved. I think the key thing about this is to try to remember that some of the studies we looked at this, which included the ETDRS, RISE and RIDE, VISTA and VIVID, is the fact that we're looking at patients whose visual acuity was 20/40 or worse, and now it comes about with the fact is, what happens to those patients who have really good visual acuity? So, I think we're going to allude to this, and this is a perfect example because these are the ones that we really question. What do we do about these cases?

Dr. Dunbar: Yeah, and so even though acuity is good and, I think, because the macula is threatened, and again, in this patient, I think it's center-involved enough that, I think from an OD perspective, that is somebody that we would refer. I think it really becomes the retinal specialist's decision whether he is going to treat or not depending on the acuity and what they feel the threat is, but I think from our perspective, the fact that you've got center-involved, I think that's a patient who also needs to be seen by the retinal specialist, and again, it doesn't have to be today or tomorrow, but within the next month or so I think that patient probably needs to get in.

Dr. Shechtman: Agree, agree 100 percent, but the other thing I also want to state is the fact, because I think people kind of forget this, is even in a non-center-involved, I think it may potentially allude to getting a second opinion, because I can tell you, my surgeons, particularly in this particular case that you just showed, most of them would probably treat with laser, almost preventing, especially in this patient, it kind of looks like they're going to progress, preventing it from progressing further.

Dr. Dunbar: Yeah. So, this is a patient that we did refer to the retinal specialist, and you can see, here they are four-and-a-half months later.

Dr. Shechtman: So they weren't treated?

Dr. Dunbar: They were not treated.

Dr. Shechtman: Okay.

Dr. Dunbar: Well, I think by the time they got to the retinal specialist, so there was an interval, and I'm not sure why it took four-and-a-half months, but the bottom line is, four-and-a-half months later they get to the retinal specialist, and now you can see that there's clearly diabetic macular edema. There's architectural changes, you can see the cystoid spaces, but what is interesting is, her acuity is still 20/25, so it's very good. The retinal specialist chose to watch and wait, and probably because of maybe some of the more recent DRCR net data that came out on Protocol V, which really asked the question, is there a need to treat these patients as soon as they develop diabetic macular edema?

Dr. Shechtman: Center-involved.

Dr. Dunbar: Center-involved, in the setting of good acuity. So, I think they were randomized into three groups. One group was observed, one group had laser, and then the other group had anti-VEGF therapy, and what they found was, after a period of two years, there was no difference between the groups, and so they recommended that for patients with good acuity with diabetic macular edema, there's no harm in following them and watching them and that there was really nothing gained by treating them earlier.

Dr. Shechtman: And the key thing, I think, they also discussed, is that when you are following them, if the visual acuity dropped during that time, that's the time to treat, which kind of comes along in this particular case. I think it went from non-center-involved 20/20 to center-involved 20/25, which shows progression, so I would think that my surgeons would likely would have treated at this point.

Dr. Dunbar: Yeah, and I would have thought so, too. There's clearly going from, you know, you can see, monitoring the chart, the

progression. Well, what's interesting is the surgeon wanted to watch and see, and they were going to bring him back very closely within a couple months, and what happened was, actually, the patient comes back about six weeks later, and the diabetic macular edema actually resolved and got better.

Dr. Shechtman: I would've bet this patient would've gotten worse, especially with the history, as you were mentioning, of kidney dysfunction, longstanding type 1 diabetes. So, this is one of those outliers, I would say.

Dr. Dunbar: Yeah, I think so, too.

Dr. Shechtman: It's not the norm, but it's a great example of the dynamics of the diabetic macular edema.

Dr. Dunbar: Sure. Now, in spite of the fact, you know, whether they did or didn't have diabetic macular edema, we categorize this patient as having mild to moderate NPDR. You know, I think from an optometric perspective, I think those are patients that, in an OD office, those patients can be watched. Again, we're talking in the absence of diabetic macular edema. You know, I think where you really need to be able to make the distinction is when they go from moderate to that severe NPDR.

Dr. Shechtman: Agreed, agreed 100 percent.

Dr. Dunbar: Kind of, what constitutes severe NPDR for you, Diana?

Dr. Shechtman: I think it's still, I mean, we have the ultra-wide FA, so it makes it a lot easier to look for capillary nonperfusion in that area, but I think the standards of four-to-one rule still apply, where you have four quadrants of hemorrhages, two quadrants of venous beading, or one quadrant of IRMA. Any of those signs constitute severe stage. Also, another thing that I wanted to point out, which I think is important, is that diabetic macular edema can occur at any given stage, whether it be mild or severe, and a lot of times the more severe you get, there's a little bit of less edema because the eye is so ischemic to begin with, so you really can't tell without looking specifically.

Dr. Dunbar: Sure. So, the severe NPDR case, remember, you're looking at risk of going on to develop proliferative disease in a year.

Dr. Shechtman: Exactly right.

Dr. Dunbar: And in that patient, it jumps to over 50%, and so that's why, traditionally, we would see those patients every three or four months. I think in light of some of the newer data on early treatment, that's a patient that now I make sure they get in to see the retinal specialist for possible early treatment, and I know you're going to tell us about a case of a severe NPDR that goes on to, you know, that needs treatment.

Dr. Shechtman: So, this is a case of mine where a patient comes in just for your regular comprehensive eye exam looking at diabetic screening. Patient does have what I like to call the trifecta – hypertension, hypercholesteremia, diabetes. You see these patients all the time. Recent A1c was 10%. At 10%, I start worrying. An endocrinologist once taught me that if you times it by 20 and add 10, that gives you your average for your fasting blood sugar, so this is over 200. Visual acuity's a perfect 20/25 in both eyes with some mild cataracts, and looking at the back of the eye, I apologize, mine is an Optos imaging and doesn't have as high magnification but certainly much better on the wider field, which we'll see in a second. How would you describe this, Mark? What are you seeing?

Dr. Dunbar: Well, you see significant hemorrhages throughout the posterior pole. I can't tell if they're in all four quadrants. You see some exudate, I think maybe some cotton wool spots I can see. You're right, I'd like to kind of blow that up, but, you know, it's more than mild. It could be even severe just by looking at the fact that it looks like it's in all four quadrants. I can't see if there's any venous beading or IRMA.

Dr. Shechtman: Well, let's look at the next one, and right here you can see a little bit of a wider field. There are some hemorrhages, but it really doesn't look that extensive. If you kind of look at the overall picture, one can easily say maybe moderate to severe at best, but even moderate someone may potentially just want to follow this patient up. What I love is the fact is of this new ultra-wide FA, not new but relatively new, and we certainly do this for all our patients with anybody who looks like moderate to severe because I really think it gives you a great picture. And Mark, if you look at this picture right here, how would you describe it?

Dr. Dunbar: Well, you know, you don't see any neovascularization. That's the important thing, so, but you do see a lot of areas of capillary nonperfusion. You know, this does look like an ischemic retina, and so, you know, just looking closely at the fundus photos and the FA, I mean, it looks like this patient has severe NPDR, which means they're at risk over the next several months of going on to develop proliferative disease.

Dr. Shechtman: And kind of stepping back before we go into the left eye, which I think the findings were quite subtle, how are your doctors treating and managing this nowadays?

Dr. Dunbar: Well, I think it's, you know, split. We know the recent data from PANORAMA, which we'll talk about, really shows, really, a significant improvement. Instead of waiting until they develop proliferative disease to treat, to start treating these patients with severe NPDR, that they have really a greater chance of having a regression. In fact, you're looking at almost 70-80% of patients have a two-step regression in their diabetic retinopathy severity scores, so there really is an emphasis to maybe start treating these patients earlier.

Dr. Shechtman: Kind of turning back the clock even before getting into the progressive stage. Getting back to a much more milder stage.

Dr. Dunbar: So, the problem, though, is you've got a patient who has, this is, again, in the absence of any diabetic macular edema who has good acuity, we know that if you're going to start treating, it does require an injection, and it's not just one injection, it's multiple injections. So, I think there's that whole, you know, do you really want to commit to that level of treatment? So, we have some retinal specialists that do feel that, especially if you're looking in the fellow eye and they have proliferative disease. They're willing to pull the trigger sooner. You know, I think it's compelling data, and I think it's really going to change, really ultimately the landscape of how we treat these patients.

Dr. Shechtman: Agree.

Dr. Dunbar: If we can reverse the diabetes and make them better.

Dr. Shechtman: Excellent, and I think that's the key thing. The other thing, at least my docs, are doing a little bit of a combination. I think our biggest problem is compliance. As you maybe stated, the fact the patient's coming on a monthly basis, and all of a sudden they skip a few months. What happens? And at this point, we don't know how many injections do these patients need. So, I think they still do PRP, maybe a much lighter PRP, to kind of hold the disease.

Dr. Dunbar: You mean more for the proliferative cases.

Dr. Shechtman: Even for severe cases, especially if you have neo in the other eye, and potentially inject them. In lieu of the fact that there's any edema, and I think we can see some edema here on the superior aspect, they're definitely going to inject, especially because it's not only treating the edema, PRP may potentially make the edema worse.

Dr. Shechtman: This eye right over here, as Mark alluded, there are some hemorrhage, but it looks overall very subtle. If we look at the ultra-wide FA, well, actually, let's look at a little bit of a wider picture, but the ultra-wide FA certainly shows neo on the inferior aspect. So, again, these are really small changes. They're out in the periphery. We may potentially miss them. So, I think any patient who has at least questionable severe should potentially be seen by a retinal specialist, especially to be able to get an ultra-wide FA to look and determination what we're seeing.

Dr. Dunbar: And just the value of the wide-field fundus photograph to be able to look at some of these more subtle cases that you may not be able to see on your clinical exam because, let's face it, patients are, you know, they've got a light shining in, they may not be cooperative.

Dr. Shechtman: They've got cataracts.

Dr. Dunbar: Yeah, so, to be able to get a wide-field image and to be able to look more carefully, and then, of course, you have the advantage of having a fluorescein, really, I think helps very much, but I agree, it becomes critical that we refer these patients earlier to the retinal specialist for potential treatment, to have wide-field angiography, to really look at, you know, how ischemic they are, and maybe pick up cases of neovascularization as you were able to do that with this patient.

Dr. Shechtman: So, why don't we led into the final discussion with regards to the study, which I think you already alluded to.

Dr. Dunbar: Yeah, so, the PANORAMA data was a study that really randomized patients with severe nonproliferative disease to either observation versus early treatment. You had a group that were treated every 16 weeks, and you had a group that were treated every 8 weeks. These were level 47-53, so on that Diabetic Retinopathy Severity Scale, this was patients who had that moderate-severe to severe NPDR. A patient that we would, in the old kind of categorization, call them severe NPDR, even that pre-proliferative case, and they were followed for a period of a year, and what they found was that the eyes that were treated with the anti-VEGF drugs had almost an 80% regression, that two-step improvement, in their level of diabetic retinopathy severity score. So, it's powerful data. It really is, you know, I think it's going to be one of those landmark studies that is going to redefine how we manage and treat patients with severe diabetic retinopathy, and again, from the optometric perspective, really, I think highlights that these patients do need to be seen earlier, they need to be referred earlier to the retinal specialist.

Dr. Shechtman: And as a final highlight, what do you think is a key thing that any of the doctors should have gotten from today's lecture or a little short webinar?

Dr. Dunbar: Well, I think the paradigm for diagnosing diabetic retinopathy has changed. It becomes more important to make sure that you're accurate in your categorization. I don't think we do anything different for mild or moderate other than make sure you're accurate. For the severe case, of course, make sure that patient gets sent in. I think recognizing that we've redefined how we categorize diabetic macular edema. No longer do we call it clinically significant, although there may be some value in that.

Dr. Shechtman: Correct.

Dr. Dunbar: It's really, now, is it center-involved versus non-center-involved? And it really kind of highlights the importance of OCT being able to make that distinction and being able to pick up these subtle cases.

Dr. Shechtman: And as a final point, I do think the visual acuity as before, it isn't as important as categorizing the patient and evaluating both the evaluation of the comprehensive exam, the full examination of the patient, as well as a macular edema center-involved versus non-center-involved.

Dr. Dunbar: Agree 100 percent.

Dr. Shechtman: Thank you.

Dr. Dunbar: I think this is really a call to action for our colleagues, to make sure that they recognize the paradigm shift for managing diabetes has changed. It's important to recognize that severe NPDR case, to make sure it gets sent to the retinal specialist much earlier, and also not forgetting about, on the other end, dealing with the primary health care provide and the endocrinologist on that end, and then, of course, the retinal specialist on the other end. It's an exciting time in diabetes, and I think ultimately it's going to represent our patients getting better care and preserving vision hopefully for a lifetime.

Dr. Dunbar: Diana, thank you so much for joining me in this discussion. I appreciate being able to spend time and talk about something as important as this.

Dr. Shechtman: Thank you.