Multi-Jurisdictional
Contractor Advisory Committee (CAC) Meeting

Meeting Date & Time: November 12, 2025, 3–5 pm ET
Topic: Implantation of anterior segment intraocular nonbiodegradable drug-eluting system

CURTIS MCFADDEN 0:16

Good afternoon, everyone. Welcome to this multi-jurisdictional CAC meeting. I am now going to turn the meeting over to Dr. Mann who will start the presentation.

Mann, Patrick 0:31

Good afternoon, everyone. My name is Patrick Mann. I am a Contractor Medical Director at National Government Services. I wanted to start off by saying that this call is being recorded and transcribed. Please mute when not speaking and state your name before comments.

And once again, good evening, everyone. We know your schedules are full and so thank you very much for making time today for our evidentiary CAC meeting discussing implantation of anterior segment intraocular non-biodegradable drug eluting system via internal approach. Our goal today is simple. Hear the expertise from our esteemed subject matter experts and examine the evidence together. We value the breadth of perspectives across centers and practice settings. For today's discussion, please keep comments concise and evidence anchored.

When possible, reference specific trials, registries, or guidelines. If you disagree, we greatly appreciate the discussion, so please briefly share the rationale and the data that informed you of your view. A few housekeeping notes. This session is recorded.

Please avoid sharing any patient identifying information. The Raise Hand feature is available for the subject matter experts. This is not an open meeting. The only speakers on the recorded line will be the subject matter experts and the contract medical directors answering questions.

When answering a question, please state your name for the record and any conflicts of interest. If anything has changed since your disclosure, please state it before your first comment. For timing, we'll aim for about 10 minutes per question, of which they're 10. We may gently keep us on track, and please know it's not to cut

ideas short, it's to make sure that we hear from everyone. Our objective today is to review and critically evaluate the literature on the implementation of anterior segment intraocular non-biodegradable drug eluting system, what it demonstrates and where uncertainties remain.

Before we get started, I want to recognize the Medicare Administrative Contractors joining us today and thank them for contributing to the discussion. These contract MACs are National Government Services, CGS Administrators, Palmetto GBA, Noridian Healthcare Solutions, Wisconsin Physicians Service Insurance Corporation. And then our esteemed subject matter experts are as follows:

We have Dr. Javid Saeed, retinal surgeon at Discover Vision Centers. He reports no conflicts of interest.

We have Dr. Jeffrey Emmerich. He is a physician at Consulting Ophthalmologist PC. He reports no conflicts of interest.

We have Dr. Nora Lee Cothron, Consultive Consultative Optometrist at the Eye Institute of West Florida. She reports consulting for Glaukos, including review of phase two and three clinical trial data and providing professional opinions on ideal and appropriate patient types.

We have Dr. Julia Ann Rosdahl, Associate Professor of Ophthalmology at Duke University School of Medicine. She reports no conflicts of interest.

We have Dr. Steve Mansberger, Chief of Ophthalmology at Legacy Health. He reports no conflicts of interest.

We have Dr. Vikas Chopra, physician in ophthalmology at UCLA Health. He reports no conflicts of

interest.

We have Dr. Daniel Liebman, staff ophthalmologist at Mass Eye and Ear. He reports having provided consulting services for AbbVie in the past and has no ongoing financial relationship with any relevant entity currently.

We have Dr. George R Wandling Junior, who is an ophthalmologist with Twin Cities Consultants. He reports receipt of research funding from Alcon and Glaukos and is a consultant for Glaukos.

And finally, last but not least, we have Dr. Naan Imani., Chair of the Department of Ophthalmology at Henry Ford Health. He reports no conflicts of interest.

And with that, we will go directly into the questions. So can you please move to the agenda. We will be going over 10 questions, attempting to get it in within 10 minutes per question, and then we will move to closing comments around 4:50 PM Eastern Standard Time. Thank you.

And then let's move to our first set of questions. One more thing before we get started. These are the definitions we have for the quality of the evidence. It's based on the grade manual, GRADE. And so, this is here for your reference. OK, next slide.

The first questions we would like to ask the group is what is considered to be the standard treatment that would be considered effective for glaucoma management? In other words, what would be the optimal primary endpoint for studies?

Investigating glaucoma treatments and then the first part of the question would be how is progression of glaucoma measured? Are the methods of measurement and data interpretation reproducible across practitioners?

Do we have any volunteers?

Dr. Chopra, please go ahead.

Vikas Chopra M.D. 6:51

Hi, I'm Vikas Chopra and I have no financial disclosures. So, the mainstay of treatment for glaucoma is essentially lowering IOP (IOP), and it's really the only proven intervention to slow down or prevent glaucoma progression. The American Academy of Ophthalmology Preferred Practice guidelines recommend an individualized target.

Liam Sullivan 7:05

Yes, yes.

Vikas Chopra M.D. 7:10

IOP lowering, typically aiming for a reduction in pressure of at least 20 to 30% below baseline with more aggressive lowering for advanced to rapidly progressing disease. Now the challenge is that the optimal rate to determine progression would be visual field decline, but often that takes time to measure, so the Practice Guidelines are typically looking at IOP measurement. Lowering from baseline and the standard for determining whether the treatment is effective in glaucoma management is the achievement and maintenance of that target pressure that can stabilize the optic nerve and stabilize the visual field over time with no evidence of disease progression.

With either structural or functional assessment a strong relationship does exist between pressure reduction, that's IOP reduction and stabilization of glaucoma. So IOP is considered a valid clinical endpoint to evaluate the efficacy of glaucoma treatment and the ideal.

The success of any glaucoma therapies is the prevention of further glaucomatous optic nerve damage and preservation of visual fields and quality of life. So, treatment success for individual patients is difficult to define by an arbitrary IOP level because individuals can vary their susceptibility in their optic nerve to damage up from the

elevated pressure. Nonetheless, pressure reduction is the goal of all current glaucoma therapy, and really no other surrogate measure better reflects therapeutic success. Thank you.

Mann, Patrick 8:41

Thank you very much. Would any of our other subject matter experts like to comment on this first part?

OK. Then the second part of the question is, does IOP reduction affect all patients the same? What is the percentage success rate of lowering IOP to slow disease progression? What would define as success, which you it's you've already in part defined? In what studies is the success rate demonstrated and is there a way to determine which patients would or would not benefit from

lowering IOP?

Go ahead, Dr. Emerick.

Geoff Emerick 9:33

Yeas, hi. I just wanted to go back actually to part A briefly- the measurement of progression.

Mann, Patrick 9:40

Please, please do.

Geoff Emerick 9:53

So, we all know glaucoma progressions measured by serial assessment of both structural and functional changes using OCT to measure the nerve fiber layer and ganglion cell inner plexiform layer, standard automated perimetry to detect visual field deterioration. And we track structural progression by OCT quantifying thinning of the RNFL and the GCRPL and those changes often precede visual field loss, so OCT is a very sensitive tool for early detection and monitoring. And if you combine the RNFL and the macular GCIPL measurements that improves the sensitivity for detecting progression compared to either one alone, and it's nice to integrate those.

For comprehensive monitoring, you can quantify rates of thinning over time. Faster thinning is associated with higher risk of field progression. And then for functional progression, we measure that with the standard automated perimetry, evaluating change in visual field sensitivity, and it's important to do.

You can do trend analysis of the mean deviation or event-based criteria to detect statistically significant progression. If you do more frequent testing a couple times a year, at least initially, you can have earlier detection of rapid progression.

And of course, confirmatory testing is recommended by the American Academy of Ophthalmology Preferred Practice Panel before changing management, because sometimes you'll have a false positive change if you want to show reproducibility. Clinical examinations are of course still very important. Optic nerve head imaging by photography or drawing to docent changes and cupping and the nerve thinning to really assess.

All of these needs to be done on an individual basis based on to these disease severity, rate of progression, risk factors and again integration of all these measures really allow us to reliably assess for glaucoma progression.

If the nerve field shows progression despite reaching a target IOP, then we try to lower the target further and intensify treatment. But if the disease remains stable, then we can consider the current therapy to be effective.

Mann, Patrick 12:19

Great. Thank you for the very thorough overview. I have a couple of questions I will ask after Dr. Cawthron gets a chance to speak. Go ahead, Dr. Cawthron.

Geoff Emerick 12:19

Thank you.

Nora Lee Cothran, OD, FAAO 12:32

Hi, Nora Cothran, additional disclosure of consulting on lecture fees for AbbVie. One thing I wanted to mention was visual fields. I think it's important to mention 24-2 and 10-2 both fields. We know that through our recent publications and understanding that within the genetics literature of recognizing that progression positioning of the field defects can differ from patients that start with higher levels of baseline IOP untreated versus patients start within the normative range and the fact that the previous group of patients start with field defects that may initiate more peripherally and then pericentrally and centrally patients that have those normal tensive type starting pressures can have defects that affect the central vision. And because of that, then another way that progression of glaucoma can be measured is with functional visual acuity in the patient's.

Subjective reading of something like a Snellen chart in the office because a new additional publication have shown that patients have damage within that central 10 central PIN-2 often have impact to their ability to read the Snellen chart.

Mann, Patrick 13:47

Great. Thank you. Very interesting. So, there's a couple of things that came up here. One of the first things that I wanted to ask is how does this relate to normal pressure glaucoma? So obviously

elevated IOP, which correct me if I'm wrong, above 21 millimeters mercury is the upper threshold, so how does this play into normal pressure glaucoma?

Mann, Patrick 14:23

Dr. Mansberger, please go ahead.

Mann, Patrick 14:38

I don't know who is speaking, and then I think Dr. Mansberger has the floor.

Steve Mansberger 14:45

Oh, hi, this is Steve Mansberger from Portland, OR. No conflicts of interest. So as far as the normal tension versus, for example, high tension glaucoma, the way that I explain this to patients is the normal tension glaucoma patients who have pressures at 18 or 19 and continue to develop progression of their structure or of their function is they just have a more fragile optic nerve than perhaps some of our patients who might be called ocular hypertension who have pressures in the mid-20s and never develop damage.

So they just have a more fragile optic nerve and the treatment is still the same is that you need to lower their pressure. As Dr. Chopra talked about somewhere between 30% of lowering is what you need to do at least in some of these patients and then you just follow them over time to see whether or not their disease stabilizes. If it doesn't, then you would advance therapy, as Dr. Emerick had talked about before.

Mann, Patrick 15:50

Thank you. Just to keep consideration of time, Dr. Imami, please go ahead.

Imami, Naan 15:58

I completely agree with what Dr. Mansberger said. I think it's also important to add if there are individual traits within the patient that may make you determine whether they may be at higher risk of that pressure having an effect. For example, what the corneal thickness is and if corneal thicknesses is thicker than average, you may be overestimated.

Committing their IOP and therefore they may be a lower risk or if they have thinner corneas, you may be underestimating their IOP. So, there are some intrinsic patient factors that can also be looked at when you're looking at IOP.

Mann, Patrick 16:34

That's a great point. Thank you very much. So, I will continue to write down questions as I have them. I will continue on the questions just to make sure that we get through them all. But if at the end we have extra time, I'll come back to them and the offer extends to any of our contractor medical directors that want to join in as well. I will hear one more comment from Dr. Wandling and then we'll move on to question #2. Go ahead, Dr. Wandling.

George Wandling, MD 17:04

George Wandling previous conflict with research with Glaukos and previous consulting with Glaukos. Another point is and these are screened for in many studies is we check diurnal variation of IOP because you'll see patients with glaucoma that may fluctuate with even as much as 10 points a day. And so maybe you're always catching them and they're 18, normal, normal, normal, but they in fact may be much higher. It's just something to always be cognizant of.

Mann, Patrick 17:40

And when you say 10 points, do you mean 10-degree millimeters of mercury or just clarify what you mean 10? OK, 10 millimeters of mercury. Yeah, no, problem. Thank you. OK, next slide please.

George Wandling, MD 17:46

Yes, in millimeters.

Mann, Patrick 17:57

So question #2. Based on the pivotal studies which are referenced as 4 through 7, do you consider the anterior segment intraocular non-biodegradable drug eluting system in effective management for lowering IOP for patients with mild to moderate open angle glaucoma? Do you consider it to be effective management in ocular hypertension? Dr. Sayad, please.

Javed Sayed 18:37

Yes. So, I think at least based on studies there's pretty robust IOP lowering across studies and since IOP is a marker sometimes for glaucoma progression, it seems like it's an effective device. I think from our standpoint we all know that Travoprost which is the medication that's being eluted, it's a prostaglandin analog and we've been using those for years to lower IOP. I think that's just a novel way to get it into the eye and so not a big surprise. There's pretty robust IOP lowering and theoretically in the long run that'll lead to slower progression of glaucoma.

Mann, Patrick 19:14

And then for ocular hypertension as well would the you'd be using it for both?

I'll get to Dr. Chopra in a second.

Javed Sayed 19:20

I think that's like a tougher thing to tease out because if it's ocular hypertension, we don't really know for sure if they're going to develop glaucoma. I think there's a thought if their pressures are high or too high, they will and it lowers the eye pressure. Whether or not those patients would be at risk of glaucoma at baseline, I think it's a little bit hard to tease out in for individual patients, but it certainly does a good job lowering pressure, which is what we're doing for ocular hypertension and what we're doing for glaucoma. That's how we treat both those diseases if we're going to treat them.

Mann, Patrick 19:57

So would the surgery then be more indicated? Sorry, not the surgery, but inserting the device be more for just the glaucoma and the ocular hypertension would be more other methods or would there be reasons to use it in ocular hypertension?

Javed Sayed 20:14

I think, for example, a patient who has had documented glaucoma in their other eye or a strong family history and there's a high clinical suspicion that their ocular hypertension will progress to glaucoma and maybe they're difficult to use other modalities like drops or poor compliance, then I think it's reasonable, but sort of err on the side of glaucoma. It seems like a great treatment for glaucoma. Hard to know how many people are going to use it for ocular hypertension alone.

Mann, Patrick 20:44

Great. Thank you. So, I saw Dr. Chopra's next and then we'll go to Dr. Wandling. So go ahead, Dr. Chopra.

Vikas Chopra M.D. 20:52

Thank you. So, , this actually is a really interesting question and I do think actually this drug eluting system is quite effective in lowering IOP. But I wanted to go back to, we kind of skipped over a little bit of 1B, and you had wanted some evidence-based information and this question kind of helps me address this if you don't mind.

So for one thing that the ocular hypertension treatment study actually was a quite a landmark clinical trial in ophthalmology and really what it did demonstrate is IOP lowering of at least 20% reduces the risk of development of glaucoma.

Mann, Patrick 21:12

No, I don't mind at all, please.

Vikas Chopra M.D. 21:28

it cut it in half essentially. Now as it was stated before, not everyone with ocular hypertension developed glaucoma, but the old study, which is the ocular hypertension treatment study, clearly demonstrated certain risk factors, such as patients who have thin corneas especially, greater cup to disc ratio are at particular risk.

Factors that you can look at and you can decide those patients really are the highest risk of developing glaucoma. And now we have actually OHTS 2 which is a 10-year study and OHTS 3 which is a 20-year study showing that much greater risk of developing glaucoma with untreated ocular hypertension. So, that's important.

Then the second part is that if you take patients who are just beyond ocular hypertension and there was a study called the Early Manifest Glaucoma Trial. So, this study is done in Scandinavia that looked at patients who had early open angle glaucoma and half the group was treated and

half the group was not treated. The treatment group essentially had reduction in progression by about half and what it actually demonstrated is that even 25% pressure reduction still had some patients progressing even though the rate was cut in half. So early treatment is incredibly effective in reducing the risk of developing glaucoma. And managing IOPs is that way to do it.

The other thing is one other thing that Dr. Imami and Dr. Mansberger talked about the normal tension glaucoma and I wanted to kind of give you information about that. So, there was a study called the Collaborative Normal Tension Glaucoma Study. This is again a landmark study. Started in the 80s and at that time the thought was that glaucoma is always related to higher eye pressures. That's kind of what I was learning. When I was in fellowship, we said OK, is glaucoma actually can it develop at pressures that are not high? So, these are 2 groups, one studied without treatment and the other group was treated in patients who did not have IOPs in the higher range, above 21 on average and over 21 on a single visit. And it also confirmed that there's a threefold reduction in progression in the treated eyes compared to the untreated eyes. So, at that time, the definition of glaucoma was changed.

The higher pressure was no longer part of the definition of glaucoma. So, glaucoma now is defined really as a progressive optic neuropathy that leads to glaucomatous optic atrophy and visual field loss. So I wanted to kind of tie all that back in to your question, but I do think that having a sustained clinically meaningful pressure reduction that a drug system can provide with a relatively low risk safe safety profile does have value in in our in our a mortarium and really I feel in all actually stages of glaucoma.

Thank you.

Mann, Patrick 24:15

Well, I appreciate you bringing those things up. I did want to ask kind of a follow-up question to that in that, is there any discussion or attempts to elucidate why lowering the IOP doesn't work for some patients? What does the literature say such as identifying pure glaucoma as opposed to other potential etiologies? Sometimes that can be difficult in some cases, and that those may muddy the waters in some of these studies. But I just was wanting to get a follow-up on that as well.

And then we'll go to Dr. Wandling.

Vikas Chopra M.D. 24:57

Yeah, that's a great, great point. So, that actually also addresses the 1B which talks about does IOP reduction affects all patients the same and reduction in pressure doesn't affect all patients the same in the same way. There are patients who have myopic retinal degeneration tilted optic discs that have a lower baseline.

Optic nerve health as Dr. Mansberger alluded to in those patients that they may be at high risk of progression even if their pressures are lower. And actually, multiple studies have shown that in normal tension glaucoma patients do tend to have often IOPs related to blood pressure in that patients who are hypotension, systemic hypotension or having ischemic perhaps damage to the optic nerve. And so often these patients have this dip in their systemic blood pressure at night when the IOP is higher and so that mismatch can lead to progression and I think one other speaker had mentioned. How diurnal variation is super, super important and that's where if you can have a consistent delivery of drug over, perhaps we can make a better difference than having giving intermittent drops to the eyes. But there are multiple factors in normal tension or low-tension glaucoma including systemic issues. These are patients who often have systemic low blood pressures, peripheral claudication, and yeah, history of migraine headaches. So, there's a vasospastic phenomenon that goes along with these patients. But again, IOP reduction does work in most cases.

Mann, Patrick 26:30

Thank you, Dr. Wandling. And then we have Dr. Cothron.

George Wandling, MD 26:36

I'm returning to question two again. So yes, I think most of us are going to say yes, we believe that these drug al systems are an effective use for lowering the IOP. I think one of the things that people are going to get hung up on is mild to moderate versus ocular hypertension. I think if you lined up 100 patients that were labeled as mild ocular hypertension and mild open angle glaucoma and 100 that were ocular hypertension, you would get a huge breadth of opinions among glaucoma specialists of who's actually mild and who's in ocular hypertension, where is that line? It's not very well defined and so that's more of a coding thing and less of a goals oriented and its very much opinion.

Mann, Patrick 27:32

Would that affect trial results, being able to extrapolate from trial to trial?

George Wandling, MD 27:32

I think that each trial will have it define what they believe to be ocular glaucoma, mild versus ocular hypertension. But even within trials there is that variable and so that's what makes it a little bit difficult to say.

Would I not treat an ocular hypertension patient with drops or this drug delivery device? Because some people may say, well, that's actually mild because they have some OCT changes where other people will say, well, it's not, I haven't seen OCT.

Velocity change, right. And so, you may say, oh, this is what they were born with versus this is how it's changed over the last five years. And so, it's difficult since you can't predict that. And that's again what the OHTS trial is one of the things that that shows is you can't predict who is going to be the people that are going to have that velocity or that that change over time. And so, this again to return to the effectiveness, yes, it's effective. Yes, it's going to be, it's useful because some people are going to be highly intolerant to drops and so that's why these systems were developed.

Mann, Patrick 28:57

Great. Thank you. I do want to talk a little bit more if we have time later about the OCT measurements and how these relate to the trials. But for now, we're going to stick to question two for one more person, Dr. Cawthron, and then we'll move on to question #3. Go ahead, Dr. Cawthron.

Nora Lee Cothran, OD, FAAO 29:14

Yes, thank you. This has to do with the question regarding patients that continue to progress with low and normal tension that are treated and then continue to have field progression or progression on the RNFL. Very similar to what he mentioned we have other extrinsic factors that are outside of IOP.

So you can lower the eye pressure all the way down to potentially the point of episcleral venous pressure with topical therapy and take the stress off of the optic nerve from inside of the eye. But other conditions, systemic conditions like obstructive sleep apnea actually impact the blood flow that goes into the actual optic nerve as it travels along across and toward the back of the eye. And so, I tell patients all the time, I can control everything inside of the eye, but there are other things out of my control that we have to be able to identify. So, if a patient's progressing and they are controlled as low as we can go, then we may have something like OSA or we now understand that when patients are sleeping, they may be experiencing pressure spikes at night that are not controlled by topical molecules, but that can be controlled in patients that have had tubes and traps and incisional surgery. The second point what had to do with question #1, the last question B and it said is aware to determine which patients would or would not benefit from lowering IOP. We now have a wide body of data within genome-wide assessment studies, association studies that have been able to create these polygenic risk scores. And a post hoc analysis of the OHTS data, that pivotal trial, we found that patients that were in the top 10% of polygenic risk scores, even those that had low risk factors like they would have been considered low risk for conversion based on the original OHTS data. When we look at genetics, those patients actually have a much higher risk of progressing if they're in the higher 10% versus those in the lower 10%. So, these types of studies are just making their way into commercial production, but it may be a way to determine which patients would benefit from treatment and which would not. Thank you.

Mann, Patrick 31:16

Thank you very much. OK, let's move to the next slide.

So question #3 is, is there evidence to guide selection of this device over other treatment options which are going to be listed below? If there is no evidence, what factors would you consider in making this decision? So, we have medication alone, we have the MIGS procedure, ee have extra ocular therapeutic options which include wearable ocular service surface devices, punctal plug systems and subconjunctival injections, and then finally other intraocular platforms such as the travoprost sustained release.

And remember, the question is, is there evidence to guide selection of this device over other treatment options?

Dr. Imami, please go ahead.

Imami, Naan 32:14

So I think there's great evidence which shows that this device lowers IOP robustly, just like other therapeutic interventions that exist. The question is comparing head-to-head different forms of treatment, different medication options or medications versus other treatment modalities and that's relatively limited. Of course the phase three study compared it topical timolol, but I think we would look at this as saying that each one of these buckets are effective at lowering IOP and then one would look at individual reasons one bucket may be chosen over another, such as a history of noncompliance or medication related side effects or concerns that someone may not follow up. Things like that may lead you to a more prolonged patient independent therapeutic intervention.

Mann, Patrick 33:15

Dr. Emerick.

Geoff Emerick 33:18

Thanks. I would just add to that. There's some evidence from the BACRAC? 2024 study that looked at the I dose subgroup on a PGA at screening 133 patients and then compared that with their in study I dose IOP at month three and did find that the I dose lowers the pressure more by 77 millimeters of mercury compared to the pre the screening IOP of about -6 -, 5.76. And there was AP value of .003 on that. So good evidence from that study is that the implant did better than topical.

Thanks.

Mann, Patrick 34:07

Thank you both. So, most of these studies are as you as you had said compared to the topicals, right. So, what evidence would be used to address these other potential options? There's a lot of different treatments available, thankfully, for glaucoma. So how would you make the determination of this or that? We'll start with Dr. Wandling, who I'm asking, he's going to answer the previous question, but if he has any comments on my question, please go ahead as well. Dr. Wandling.

George Wandling, MD 34:40

I'm focusing on question 3 here. I'm just going to go ABCD really quick. So, medication alone sometimes it's mostly an intolerance issue or in or a burden of the patient administration or continuing to decline despite.

Reported adherence to the medication and so medication alone it' intolerance and other issues. Mixed procedure I don't see it as and/ or and there's no evidence at this point to compare it because it's been too new of a delivery system.

But studies will show that when we do MIGS, we oftentimes will have to treat with medication after the fact. And so, this is just another delivery mechanism for medication. And so, I don't see this as MIGS. We're not saying MIGs or drops, we're doing MIGs and drops and this is just another delivery mechanism for this, this drug right now. Part C there's really not on the market at this point in America extra ocular therapeutic options. For a glaucoma drug delivery that is widespread, maybe there's some devices that I'm not familiar with, but there's nothing commercial that it has really come across our area. And then the last one, other platforms, I don't have a good rubric for when I'm choosing the Bimatoprost versus the iDose other than in our group. It's opinion then there's no and there's no evidence, there's no head-to-head right now, but I believe that both are very effective. Thank you.

Mann, Patrick 36:29

Thank you. I saw Dr. Chopra was next. Please go ahead.

Vikas Chopra M.D. 36:33

Yeah, thank you. So, I think as ophthalmologists we under appreciate the burden of medications, it's and really the amount of non-adherence, I mean multiple studies actually a dozen or so have shown that nonadherence or poor adherence, it's highly prevalent. And as doctors, we're not able to tell. We all think that our patients are the most compliant because we're good doctors. But really, , if you look at studies, one study showed nearly 50% of patients' discontinue their initially prescribed drops within six months and 90% intermittently fail to refill their prescriptions over a three-year period. So nonadherence is hugely prevalent. So having a way of delivery of medication that doesn't have adherence issues is a huge plus. Plus, I think as was mentioned local and systemic side effects often we see patients with this.

It'll be, , red eyes and it would it's and we expect them to just kind of deal with that and that has obviously quality of life issues and they may be non-adherent because of that. So, if you can

minimize those things, I think that is one way, , medication alone as far as MIGS procedure. Now again, most of the time glaucoma requires more than one thing, especially as the disease progresses and always does progress with age, but they're really fundamentally different, MIG, or surgical intervention. This is a drug implant. You often need concurrent things to really lower IOP. But since we don't have enough data to say one should be done before the other. But most of the time you're going to do less invasive procedures like SLT are an effective treatment of glaucoma and you are likely going to do that before you do surgical intervention. So, we would start with the less invasive ways of lowering pressure and then go to higher. And this also is supported by data from another landmark trial called the Collaborative Initial Glaucoma Treatment Study. So, this is a study that was done in patients with glaucoma and they were randomized to surgery first versus medication or other noninvasive procedures like laser bursts. And what it really found is that at five years, if you can lower the pressure adequately, there was no difference in 10 years surgically offered, just minimally more effective improvement over medications or lasers. So, if you can find a way of delivering medication to the eye safely, then that is usually you're going to start with that rather than going to surgery. So that's how we look at it, just less invasive. But at the same time, you have to lower the pressure enough so that the patient doesn't get worse and you have the best option to do that in early disease before they get, to the to the Cliff where they're going to go off the cliff and have vision loss.

Thank you.

Mann, Patrick 39:23

Thank you, Dr. Cothron was next.

Nora Lee Cothran, OD, FAAO 39:28

Yes, thank you. This is a disease that disproportionately impacts on some very vulnerable patient populations, patients of lower socioeconomic levels and also the elderly. In the first group, there's a publication from Kim et al and is an American Academy of Ophthalmology paper in conjunction with the American Glaucoma Society from 2023 that looked at transportation and lack of transportation among patients actually directly impacted the ability for them to obtain glaucoma care and led to worse outcomes. And that's just not transportation to our exams, but transportation to the pharmacy to acquire medication. I agree with one of the previous doctors that this particular device that we have in discussion is it is a prostaglandin analog, but it's the delivery system is superior than the bottle itself if a patient doesn't have the ability to access the bottle of medication by going to the pharmacy, access the follow-ups for us to maintain that they're on the medication or the other vulnerable group of patients are patients that are elderly patients who suffer from autoimmune disease that have poor installation technique. Rajnala et al did a paper in 2022 that evaluated patients on how well they could actually instill drops. And patients evaluated themselves and then an external evaluator evaluated whether they were good in instillers or non-good, non-good instillers, and essentially poor instillers and those are poor technique for installation. 100% of those patients progressed in glaucoma with some with visual field defects within five years time period and there's a very short period. and It was a fairly highly powered trial and so I think that we have to think about not just immediately what's happening at this moment in time of what lowers the pressure, but what will keep the patient safe in a longer term along their glaucoma journey. Thank you.

Mann, Patrick 41:25

Thank you. I do want to put a pin in the question that one of the questions I would have is with the trials. If this is a consistent problem of patients nonadherence, how would that affect the trials? But we'll get back to that later. Dr. Mansberger and Dr. Liebman, I saw your hands.

To keep the thing going, we're going to go to question #4. If we have time, if you can come back to those questions that you had on #3, or actually answers you had for #3, that'd be great. But let's move on to the next question just to keep on time. So, question #4, does the evidence demonstrate if there is a decrease in risk of patients progressing to glaucoma, OHT or worsening glaucoma. In other words, can we determine if this device reduces the chance of vision loss over time? If yes, what evidence do you consider supporting this and why? And just to add to this question, a lot of the studies address the drop in IOP that is seen with this device, but is there studies and is there information as to that actually having an effect on the glaucoma understanding that the main target in the treatments is the IOP? So, whoever would like to go first, please let me know. Dr. Mansberger, please go ahead.

Steve Mansberger 42:51

No, I think the question is, is whether this device has shown decreased chance in vision loss over time and those studies I think are being done but it has not been shown at that time at this time.

However, it does show, as we said, robust IOP lowering, which we know is a is highly correlated with both structural and functional loss over time. So it would be quite obvious that IOP lowering with this device would lead to decreased structural and functional worsening. And it's just important to mention that these studies to look at structure and functional worsening usually take several years, three to five years where so far these medicines are demonstrating efficacy by IOP lowering and those studies are much shorter, so these type of studies to determine the effect on structural and functional progression take a much more time. Thank you.

Mann, Patrick 43:52

So when you see that, when you say they take much more time, one of the things that I noted in the studies is that the standard that's being often used is right, the perimetry, and there's less information in the studies that we're cited here about OCT and the other structural things. So, is there a push to incorporate other methodologies of assessing and are those methods going to accelerate the effect that we can determine whether or not this helps vision loss?

Steve Mansberger 44:28

Yeah, there are. There's fancy ways of testing a function with multiple visual fields at the at a start point, which is called cluster analysis. I think somebody earlier mentioned more rapid visual fields.

During the course of study can pick up progression and decrease variability and then there right now I don't the structural endpoints are still being worked out, but structural testing as we mentioned earlier was a much more effective way of picking up progression earlier before functional loss.

Mann, Patrick 45:06

Great. Thank you. Dr. Imami, I think I saw your hand next.

Imami, Naan 45:10

So I think there's really good evidence showing that IOP reduction reduces the risk of glaucoma development, the risk of glaucoma progression along the entire spectrum. If you look at the ocular hypertension treatment study, early manifest glaucoma treatment study, advanced glaucoma intervention study, all of those studies show that IOP reduction is a good proxy for prevention of visual field and optic nerve damage down the road. And I also think that if you look at the collaborative initial glaucoma treatment study, you get pressure lowering effects as were mentioned both from medications and from surgery.

They had more pressure lowering from surgery, but both of them lowered pressure significantly to slow the rate of progression. So I think it doesn't matter so much, at least in a big spectrum of people, whether you lower the pressure with medicines or with surgery or how you do it as long as you get the pressure down effectively get it down for a prolonged period of time, and it seems like this intervention shows that that's a very achievable goal. So how it's done, this is one way of doing it.

Mann, Patrick 46:23

Great. Thank you. Next one I saw was Dr. Wandling.

George Wandling, MD 46:28

Yep, this number four. So, OHTS trials brought up, been brought up many times. They were blind to which drug they were using to actually get that 20%. This is just another delivery of a drug to help us get that 20% down and so then that NIAC showed that the study with changes in individual glaucoma progression talking about velocity. So, this should be able to deliver the same slowing of velocity as other drugs.

Mann, Patrick 47:03

And do they do they show the same slowing or is it just point wise? So obviously some trials look at point wise, some look at velocity.

George Wandling, MD 47:10

That's right but the OHTS trial was blind to which drug is you using. So, you could do just the same, you got 20%. It doesn't really matter how you're getting there as much as that you're getting there.

Mann, Patrick 47:28

OK. Thank you. Dr. Cothron, you were next.

If you're speaking Dr. Cothron, you're probably mute.

Imami, Naan 47:43

Thank.

Nora Lee Cothran, OD, FAAO 47:43

Thank you. The body of evidence that currently exists for this particular device does not show a direct flowing of progression for patients that have glaucoma. But we do know from the early manifest glaucoma treatment trial, one of our landmark studies, that shows that for each millimeter of mercury of pressure reduction within the first few months of treatment, the risk of glaucoma progression actually decreases by approximately 10%. And so, it isn't the device itself but just moving the pressure down to a lower rate, as we talked about in the first question. And another doc had mentioned it takes multiple years for studies to actually show, , if there would be a change in progression for this particular device.

The device has medication that eludes over a certain period of time that may not last long enough into the number of years that it would take, for example, for a set of data like the horizon data that look went out five years and actually showed a decrease in field progression. And so, I think that if that type of body data would be there it would need to be one of these devices that was removed and then replaced with a new one because the medication does eventually wane in time.

Mann, Patrick 48:53

Thank you.

OK, let's move on to our next set of questions. That's the first four. And again, I wanted to thank you very much for citing so many studies and providing so many informative evidence citations. If you can send anything that you don't see to us.

In other words, citations that we should be looking at, we greatly, greatly appreciate that. OK, so question #5 is based on the evidence, what patient criteria should be considered for the use of the Travoprost intercameral implant? And then there's some sub-questions here. Is there?

Evidence to support use in mild to moderate OAG? And what about severe OAG? And then is there a range of IOP that would be appropriate to use this device for ocular hypertension? And if so, what range?

What are the absolute contraindications for this technology? What are the relative contraindications for this technology? And then what patient criteria, e.g. medication, non-adherence, physical inability and using drops, etcetera, would you consider relevant?

In selecting patients for this device, what documentation should be required? And I know that we've gone over some of this, so if you can focus on the areas that we haven't touched upon yet, that would be great, but feel free to reiterate some earlier points if that helps the conversation. Thank you.

Dr. Imami, did you want to speak?

Imami, Naan 50:46

Sorry, the collaborative initial glaucoma treatment study looked at medications versus surgery for treatment of glaucoma. But there was a subgroup of people who had advanced glaucoma in that study, where it was felt that the lower IOP potentially obtainable by surgery possibly a better initial intervention as opposed to both interventions being relatively equal. So that could potentially pose an interesting point here with this implantable device where if compliance or adherence was potentially lowering the effectiveness of the medically treated arm.

In that study, and you use an alternate form of medication which removes the adherence piece from it, then it may potentially place it as a better intervention for advanced glaucoma as opposed to some of the other options, such as using medications early.

Mann, Patrick 51:46

Thank you, Dr. Rosedahl.

Jullia Rosdahl 51:50

Hi, this is Julia Rosdahl. No conflicts. Thank you. So just with regards to this question, the evidence to support the intracameral implant and mild to moderate open angle glaucoma, I think that's where these pivotal studies shine. These are the patients that they that they used for these studies. So, I think that's where the strongest evidence is to support the use of this device because of the way the studies are done. they do a washout period and so that allows the pressure to go up temporarily to really get the read. That helps show the effect of the device

and that washout period just isn't always safe for a patient with severe opening of glaucoma. So, they weren't necessarily included in the studies, but that doesn't mean that that wouldn't be really useful for these patients as well. So, I think that's where there's a little bit of an evidence gap, but that doesn't mean that those patients wouldn't benefit from it. And then for B, is there a range of IOP that would be appropriate? I think here it's that that IOP like we've talked about that that that we feel is dangerous for patients where they would have progression.

So it really depends on what each individual patient and what they need for the absolute contraindications. I think we'd all agree we wouldn't want to do this in in a patient where there's an infection. Active infection where there's no view to the angle where you can't access the angle. if the patient's really not able to position to do the surgery safely or if there was really risk for penetration, a patient with a corneal dystrophy to get that device in safely. And then for relative contraindications, a patient where you weren't sure about the angle, you weren't sure you were able to get it in there, such as with neovascular glaucoma or uveitis glaucoma. Potentially, if the patient was really quiet and the angle was amenable, you might consider that this device is in those patients. But I think that would be a relative contraindication, certainly with corneal diseases like ___ with aphakia. I want to be careful also in patients that have had prior angle surgery like a goniotomy or a trabeculotomy where you weren't sure that that device would sit there. Then for E the patient criteria, I mean that's a nice list and these have come up in the past what the other doctors have mentioned, , patients who just cannot get medication into their eye for whatever reason, mental or physical was covered this a lot, so I won't go over that more, but that's my input.

Mann, Patrick 55:08

Very thorough. Thank you very much. Would anyone else like to speak to this question?

Dr. Cothran and then I think Dr. Liebman was just right before you. So go ahead, Dr. Liebman.

Liebman, Daniel L.,MD, MBA 55:28

Thank you. Yes. So, Dan Liebman, Mass Eye and happy to be here. No new conflicts to disclose. I think Dr. Rossdale had a did an exemplary job of going through a lot of these. I think just a few points that I will highlight it kind of especially in light of the pivotal trials with regard to that. I think that the pivotal trials are to be commended in some ways for taking on a large range of types of glaucoma. I think emphasizing that open angle glaucoma encompasses a range of conditions, pigmentary glaucoma, pseudo exfoliation glaucoma, secondary open angle.

The pivotal trials in did enroll patients across the full range. So, I think emphasizing the full range of open angle glaucoma's was included in the pivotal trials and generally showed good response kind of across so to me to my eye.

The device really is in is certainly indicated across the range of the different open angle glaucoma. I think that the ability to implant the device to me is the number one when it comes to confiscation or lack thereof and the ability to docent that the angle is in fact open enough to be able to seat the device, to keep the device away from the cornea. So having a deep enough angle that the device can sit in there and then certainly like Dr. Rostel mentioned, having neovascularization or other factors in the angle that would preclude its safe placement really to me are the main absolute contraindications. Relative contraindications certainly would involve the ability to corneal diseases that that that certainly haven't been. I think there's the data that isn't their regard on those patients were excluded from those trials if they'd had corneal transplantation or other issues. To me, it's not necessarily an absolute contraindication. If there are pressing argents for why a patient needs to have their pressure lowered and cannot use topical agents. In some of these cases, it could be considered on a case-by-case basis. So, to me, a lot of these corneal issues are more relative than absolute.

But the ability to place the device in a range of open angle glaucoma I think is very well supported by the by the pivotal trials and documenting the ability to place the device safely. I think and a relevant reason for why the patient needs the device either an intolerance or an inadequate response to topical agents or an intolerance to topical agents.

Or poor adherence, I think, would be appropriate to docent for the use of this device.

Mann, Patrick 58:00

Thank you. Now I can't remember the hand disappeared. Was it you, Dr. Cothron, that was next? And then I saw Dr. Wandling wants to speak as well.

Nora Lee Cothran, OD, FAAO 58:11

Yes, thank you. I just had a comment on question 5A, the second question. I agree with the previous doc about the ability for severe patients to be precluded from some of these studies

because the danger of the washout period to be included in these studies could allow the disease to become unstable in order for them to be enrolled in this study. I think it's important for us.

To recognize that even outside the particular study for this particular device, for patients have severe vision loss from a public health perspective, it's very well documented in the literature that patients that have severe disease, severe vision loss from diseases like glaucoma macular degeneration, they not only suffer from higher rates of depression and anxiety, which increases an increase in the economic burden, but also the psychosocial burden, but they also have higher rates of all-cause mortality. And so if you have a patient that has severe glaucoma who is responding to a topical prostaglandin and their pressure is at target, and then to question five E, and there is something that is limiting them from being able to utilize that prostaglandin, then those types of patients I think are perfectly appropriate candidates and it would be perfectly reasonable for them to be able to utilize this device.

Mann, Patrick 59:21

Thank you, Dr. Wandling.

George Wandling, MD 59:25

Yep, just quickly 5B. I really think it's a mistake to try to put a range on the IOP. Again, as previously mentioned, washouts are not always possible. Washout is going to give a false sense of what is their pressure without doing a washout, what is their pressure?

Treated, untreated, etc. And you don't want to put a cap on it because sometimes you just have to throw everything at the problem to get the pressures as low as possible. And so, I really think putting a range on when it is appropriate to do certain interventions in glaucoma is a mistake. Thank you.

Mann, Patrick 1:00:01

Thank you.

So let's move to our next question, which is already overlapping this question.

What would you consider the limitations and strengths of the referenced papers, which represent pivotal papers used for FDA clearance of the device? And we've already addressed this a little bit with the washout period in patients with severe glaucoma. But if there's other things that you would like to mention such as limitations and strengths, please raise your hand and we'll get to you next.

Dr. Rosdahl?

Jullia Rosdahl 1:00:52

Thank you. So, , just a couple other strengths are randomized clinical trial, the placebo drops that were used with the iDose. So, I think that's a strength how they designed it where even the iDose group was using placebo drops and the timolol control and a sham surgery, so I think they were thoughtful about their control. The studies used United States sites. They were done here in the United States. They had the washout as mentioned out to three months. They used masked IOP measurements. Can't really be masked to what the surgery was for the surgeon, but they really worked hard to make that as robust as possible. They did measure corneal endothelial cell counts and measured the visual field, the Humphrey visual field. I think number of limitations is just like with any study. The study's not perfect. I wish they would have included patient reported outcomes or satisfaction assessments, which would have included OCT. I think it would have been interesting to find out about the patients who did not stay enrolled in the study group and then some of the results they reported where the iDose group kind of seemed favored.

With the how they describe the proportion of patients on fewer topical medications, I wish they would have really stuck with kind of total medications on that. So those were the things that I thought were kind of notable about the papers.

Mann, Patrick 1:02:37

And would have mentioning the types of medications that they were on, would have that helped as well? They mentioned that they the number of medications, but would have mentioning the types of medications have made any difference?

Jullia Rosdahl 1:02:50

I think that the way they designed it where they had the iDose compared to Timolol, I think that that makes sense, how to design it that way because that's a lot of the medications are compared to Timolol to get approval, but it kind of limited then to what medications you.

Add back because if you're masked and you're not sure whether they're taking the timolol or the placebo drop, what you can add back, I think that that kind of limits what you can do for the patient. So certainly, seeing what medications they added back, I think thinking about the total medicine medication is useful to see.

Mann, Patrick 1:03:38

Thank you, Dr. Emerick. And then we'll go to Dr. Chopra after Dr. Emerick.

Geoff Emerick 1:03:44

Yeah, we haven't discussed too much the Durysta studies. We did mention earlier one limitation of some of the studies we've talked about is that it's really just looked at IOP. One of the Durysta studies did look at visual field progression over an 18-month period and did find a difference in.

In visual field loss between the Durysta group of less than two decibels and the Timolol wing it was about 8 decibels. So, there is one moderate term study out there showing efficacy in terms of reducing visual field loss.

Mann, Patrick 1:04:23

Thank you. And we'll get to the Durysta in later questions as well. And so, this can be brought back up. Yeah, no problem. Dr. Cothron, I do see that your hand was listed as the first, but since I promised Dr. Chopra next, I'll let him go next and then we'll get to you next. I apologize.

Geoff Emerick 1:04:29

Oh, next.

Vikas Chopra M.D. 1:04:43

Thank you. So, I think, , you raise a really good point about knowing which medications typically. I don't know if that would make that much of a difference. What happens in medications as you add medications to a particular patient is that the first intervention always gets the most bang for the buck, then the second one a little bit less, second one, the third one a little bit less.

And usually there's a, generally speaking, kind of a known regimen in how we proceed. Typically most patients start with prostaglandin analogs and then second treatment may be a beta blocker or alpha agonist and sometimes you might use a carbonic inhibitor.

Part of it is really has to do with choosing the right medication of the right patient based on side effects, intolerances and their adherence issues. So, if you can use medications that are less needed, you don't have to do it twice a day or three times a day. Those are typically preferred. So that's kind of how you'd think about it, but I don't know if it would have made any difference knowing which medications they were on with three versus, two versus one. But that , it would be useful information, but I don't know if it would have made any difference in the trial. And the second thing is in the I dose studies there were reported visual fields. I can't remember, that phase two or phase three were trial where they showed no difference in progression in outcomes. Now, the thing is all three groups, Timolol, the fast eluting and the slow eluting stents all were reducing the pressure. So, pressure reduction was achieved in all three groups and hence you would not expect any real differences in visual field progression. But there was that in addition to what Dr. Emerick said about the Durysta study, but in the IDO? study there was shown that visual fields actually did not progress, but unfortunately, they didn't have information about the OCT.

Thank you.

Mann, Patrick 1:06:37

Thank you, Dr. Cothron. And then I have a question about this one for the group.

Nora Lee Cothran, OD, FAAO 1:06:44

Yeah, I do think one of the limitations was running head-to-head against Timolol. I know at the time that the FDA was for this both and the pivotal trials for the approval for the ? stay and release Timolol was considered the standard of care and now all of the newer studies that are moving forward after these particular studies.

Studies revision process using utilizing prostaglandin analog as a standard of as a standard of care and as the comparator. I think it is important to recognize that the mechanism of action of Timolol is different than a prostaglandin analog. And so if you have some, I know that if you have some patients that may have been on one particular drug class before responding really well to it, even though the angle is open, there are some aspects about the genetics of patients that are a little different how they respond to medications. But I think it is just something to take into

consideration that running the study against actual topical prostaglandin analog would have would have been a little bit more robust data.

Mann, Patrick 1:07:46

Yeah, that'd be very interesting if that study would be done. Before I get to you Dr. Liebman, the question I had also for the group around this was about limitations in regards of how long the follow up was. So, the FDA clearance was based off of 12 months, I believe, right? So, do we have any assessment for the prolonged use of this and its effectiveness for longer periods of time?

And I'll let you go, Dr. Liebman, and then I'll see if anyone has an answer to that question. So, go ahead, Dr. Liebman.

Liebman, Daniel L.,MD, MBA 1:08:24

Sure, I can speak both to that and I guess so, I'll speak to that to quickly follow up on the point around comparison to Timolol. I think yes, it's in in it was the standard of the sort of the standard of care of trial design at the time that this was done. It's not the only one that compared to Timolol certainly.

A comparing of like to like is a little bit different. I will just point out Baccarac's 2024 subgroup analysis did at least look at pre post IOP for patients for the subgroup of patients who had been on a prostaglandin prior to the study and.

Did show a comparable. In fact, if anything there was a slight I think it was minus a A7A7 millimeters of mercury reduction for the I dose with a 5 millimeter or five and a half five 5.7-millimeter reduction pre washout with their previous topical PGA. So, it's certainly not the same as a prospective.

Comparison, but we do have a subgroup analysis looking at those exact same patients who had previously been on prostaglandins who still did show good efficacy with the eye dose. So, certainly yes, it would be nice to have the other comparative group, but I do think that at least serves to answer that question to some extent.

To your question around the length of follow up, yes, then I think yes. So, the phase three was one year. We do have Berdahl's the phase two does put us out to three years and we and in addition to that study I think we do have a smaller I'm going to.

Not pronounce the name properly. I think it was Shea, Shea, Shakely? Shekely had a follow-up that kind of looks at some of these devices after explanation around the three-year mark or around the two-year mark, still showing probably about a year's worth of medicine left inside.

Them. So, on the one hand, yes, the device is only designed to really elute medicine for up to around three years, but I do think that this time course is at least reasonable for the type of device that we're looking at.

Mann, Patrick 1:10:31

Thank you. And I just correct me if I'm wrong, but I believe it's two years, right? Eidos are set for two years. Three years was the period of time when they saw a continued.

Liebman, Daniel L.,MD, MBA 1:10:41

So, yeah, the follow up, the follow up lasted for three years and did show continued IOP reduction for a substantial proportion of the patients out to that point. And then the other reference study I was mentioning is just kind of gives a little bit of a pharmacologic or pharmacokinetic potential basis for that which was examining the devices that had been implanted around the two year mark still showed a reservoir of I think around 16% of remaining medicine. So, projecting out would be expected to probably have a meaningful IOP lowering effect for around 30 30 months I think.

If you graphed out the amount of residual medicine and then it plus or minus any residual effect similar to what you sometimes see with Durysta after the medicine is physically gone. But yes, two years for the device, but three years for the follow-up period and around that much for efficacy in terms of IOP lowering effect.

Mann, Patrick 1:11:39

Thank you very much, Dr. Emerick.

Geoff Emerick 1:11:43

Yeah, thanks. I was just going to speak to a little bit more the Birdall study that Dr. Liebman was referring to and this relates a bit to what we'll come back to in question 9 on long-term safety. But this is the Phase 2B study that followed patients for three years.

With comparable IOP lowering out to that three-year mark and with the percentage of iDose on the same or fewer topical medications at 69% in the eye dose group versus 45% in the timolol group.

And found it to be very safe at that three-year mark, no significant difference in endothelial cell counts and continued efficacy at that point. It is a smaller study. There were 54 patients in the iDose group.

And 49 in the Timahaw group, but really convincing and robust data. Thanks.

Mann, Patrick 1:12:50

Thank you. So, let's move to our next question, question #7.

So, the pivotal studies demonstrate non-inferiority of the Travapost intercameral implant as compared to timolol drops. Do you consider this sufficient evidence to recommend the implant as a standard of care? And then, if no, what criteria would you consider before recommending this device as an alternative?

To standard of care medical management, and if yes, what evidence influences that recommendation?

Dr. Liebman.

Liebman, Daniel L.,MD, MBA 1:13:38

So, I think I think we we've sort of discussed the point of the comparison to Timolol already but I guess I would I would circle back to saying I think the evidence ultimately going back to the top of this discussion around the central importance of IOP lowering as the really the only.

Modifiable risk factor for glaucoma. I think the real question to me is does a device like this meaningfully and sustainably lower IOP to a degree that I would consider to be clinically meaningful and to my eye the pivotal studies do say yes we see robust.

IOP reduction certainly commensurate with Timolol also again referencing the Baccaract? subgroup looking at also commensurate with a prior topical prostaglandin use in a way that I would expect to be clinically meaningful for glaucoma patients. So, I think if I suppose the question of standard of care, to be honest the standard of care for glaucoma is to lower is to lower IOP to a degree that is likely to lead to reduction in the rate of progression of glaucoma as we have previously discussed.

Just around 20 to 30% at least as an initial goal and some patients need more. So, to the extent that this device can be a part of the armamentaria to accomplish this, I think the studies do show that this device serves to lower pressure.

Where does this stand within the armamentarium? I think glaucoma is an inherently personalized there is an inherent personalization to each and every patient's care. So, where this stands within I think the evidence is sufficient to show us that this device does do what it is intended to do just lower the pressure. Where that should stand in the armamentarium when it comes to other, either drops or SLT. I think that is inherently an individualized patient level discussion, but kind of goes back to what we were discussing before around patients who require pressure lowering

for whom topical agents are not are not functional or not working for the reasons we've discussed and certainly as a as an alternative to other more aggressive or more invasive means of lowering eye pressure. I think the data that does support this device within our armamentarium for use.

Mann, Patrick 1:16:11

Thank you. I think I saw Dr. Chopra's hand up, but he put it back down. Dr. Chopra, did you want to say something?

Vikas Chopra M.D. 1:16:17

I just wanted to say, I agree with the Dr. Liebman. I mean there is this trade off that exists between safety and efficacy and you really do have to individualize care as you mentioned, in patients with more advanced glaucoma or rapidly progressing glaucoma in patients. What we call catastrophic visual field progression is in more than one or two decibels of visual field loss per year. You have to do a much more invasive procedure and then the risks of that is acceptable because the alternatives of blindness is much greater so.

I think it's good to have the full armamentarium, as we said, because glaucoma is such a heterogeneous and a disease process that really is a full spectrum and patients are simply living longer and you need to do somewhat earlier intervention certainly with less invasive things, MIGS

surgeries or the intracameral implant perhaps, having that option I think is incredibly valuable. Thank you.

Mann, Patrick 1:17:18

Thank you. And then so one follow-up question and then we'll get to Dr. Cothron, would this be considered ever a first-line treatment?

Vikas Chopra M.D. 1:17:31

I would not consider this a first line treatment except as mentioned I think by Nora and others where in certain patients say they have shown effectiveness to a prostaglandin analog. That's the medication that works really well for them, but they develop ocular intolerance because of preservatives in the medications.

Or just in general with periorbital orbitopathy, then you can put this device in and lower the pressure equally well if they were controlled before. So, in that case I would say OK fine, do this as a first line intervention, but perhaps not standard of care over medications, if you were to ask my opinion, because it is intervention. But in certain patients where if they have arthritis, they can't put the drops in, dementia issues, then certainly this would be a primary option.

Mann, Patrick 1:18:23

Thank you. And then you guys can answer the rest of you can answer the question that I just asked as we go through the list. So, next is Dr. Cothron. So, please Dr. Cothron.

Nora Lee Cothran, OD, FAAO 1:18:34

Thank you very much. I agree with Dr. Chopra. I as a non-surgeon, I would not be able to recommend this as a standard of care because I feel prostaglandin analog topical therapy is the standard of care and within the optometric space you have optometrists in all 50 states that are actively managing the early forms of this disease.

Mann, Patrick 1:18:37

OK.

Nora Lee Cothran, OD, FAAO 1:18:54

It's really important to think if we start labeling a surgical intervention as the standard of care, well, then now you have an entire group of healthcare practitioners in the United States are actively managing this disease that would then not be participating in the standard of care. And there just simply aren't enough glaucoma surgeons and the anterior surgeons out there to allow this in standard of care.

I do believe that all surgeons should have this in their therapeutic armamentarium and the ability to use it in those appropriate patients that have proven to respond to prostaglandin analogues and just don't have the ability to effectively get the medication into the eye.

Mann, Patrick 1:19:31

Thank you very much. Our next speaker would be Dr. Imami.

Imami, Naan 1:19:38

So, I think that again, there's clear evidence that this is a very effective treatment in a significant group of people who have glaucoma. And we've talked about its effectiveness and we've talked about the safety piece, very important. I also think there becomes a value piece that needs to be considered as we look at society's limited health care resources and for example, what's the pressure reduction per unit value of cost for what's being done. And that also I think needs to be considered as you look at this as an earlier intervention versus potentially a more value-based intervention first, assign everything else is equal from an efficacy and side effect perspective.

Mann, Patrick 1:20:26

Thank you. And then lastly for this question and then we'll move on to the next one, Dr. Wandling.

George Wandling, MD 1:20:33

I just think that standard of care is different than first line, right? And so yes, this can be within the standard of care. That doesn't mean it's the first line for every patient, right? In general, the preferred practice pattern now has really shifted into (Selective Laser Trabeculoplasty (SLT)) the preferred first line treatment for most patients that come in the door. However, there's going to be some patients where whether it be allergies or different things that we've discovered that maybe this would be the first line treatment for that particular patient and we just don't and so it would be

within the standard of care for that particular patient, that doesn't mean it's not a proper thing to recommend. And so yes, standard of care can mean a lot of things. It's more of a flow sheet. First line preferred treatment may be a different recommendation or rather that be drops or SLT in in most 98% of patients. Thank you.

Mann, Patrick 1:21:29

Thank you for providing some definitional clarity. Thank you. So next question, next slide.

So, now moving on to Durysta Bimatoprost implant (dissolvable) is a sustained release medication for lowering IOP for glaucoma or ocular hypertension after insertion into the anterior chamber. The FDA label approves this for single injection.

How do you determine patient selection for this device? Does the evidence support effectiveness? Is there any evidence to support use of this in combination with MIGS procedures or other glaucoma managements? And is there any evidence to support repeat administration of this device?

Back to Dr. Cothran.

Nora Lee Cothran, OD, FAAO 1:22:32

Thank you. I think I can speak a little bit for this. The way the pivotal clinical trials for the phase three data were set where the bimatoprost implant was- its eludes medication over the course of three to four months and the trial was set up to place a pellet into the anterior chamber at particular intervals and these pellets were then stacking up into the anterior chamber, coming into contact with the endothelial. Because of the endothelial cell loss, I suspect it's why the FDA labeled it for a single injection use only. The medication or the MIG does have the potential to lower IOP much longer than the medication is eluded and there were some discussions within the glaucoma community and Dan Samer had a very interesting page paper in 2023. It was discussed when our AGF meeting was on lockdown and the paper was published two years ago that looked at the placement of bimatoprost into the anterior chamber versus on the eye itself, on the on the as a drop, resulted in upregulation of MMPs, or think of it like the straight sweepers that keep the trabecular mashwork clean and clear out the extracellular matrix, and that may be the ultimate mechanism of action by which, even though all the medication is eluded,

that patients are still achieving lower pressure even months and years after study. A recently published paper this year by Dr. Mann and his colleagues found that, known as the Argos data set, showed that at the 18-month mark, about 77% of patients still had lower IOP, even though for some patients, even my clinical practice, the vehicle is completely eluded. And so, I don't see any major contraindication for repeat administration of the device because repeat administration would more than likely be done at a much longer interval than the three to four months that were utilized in the phase three clinical data. Thank you.

Mann, Patrick 1:24:37

Thank you. Dr. Wandling.

George Wandling, MD 1:24:44

Yeah, I've maybe I'm misremembering and someone can speak to this, but I believe that's the stacking or the endothelial cell issues were really only with the larger device and that's why they the company chose the smaller device and to put to market and they really didn't show that endothelial cell issue. If you've seen them implanted over time, you will see that the device significantly gets smaller over several months to the point of where it really shouldn't be significant when you're doing a repeat injection. But is there any evidence to support? Yes, they were doing repeat injections. Is there any evidence to support this in combination with MIGS procedures? I don't believe there's papers out. I will double check that and submit any if I find any evidence. Does evidence support effectiveness? Yes. How do you determine patient selection for? Again, it's going to be similar things, intolerance, inability to place the drop, dry eye, and sometimes it's just dry eye. It's all we're trying to accomplish and just getting a patient off of another topic is really beneficial for that patient. Thank you.

OK.

Mann, Patrick 1:26:03

Thank you. Dr. Liebman, you were next.

If you're talking Dr. Liebman, you're probably on mute.

Liebman, Daniel L.,MD, MBA 1:26:15

Oh, I apologize. So, yes, just to follow up on the question. Yeah, so within the Artemis studies, the pivotal trials for the for the bimatoprost implant, there were two sizes that were being studied, a 10 and a 15, the 15 was 50% larger and was not ultimately brought to market. The 10 is what is now known as Durysta. I guess I'd emphasize that the trial use of the device does not mirror current practice. They injected it on at four-month intervals, something that we no longer do. They did show there was some endothelial cell loss even with the 10 though again that was with stack, there are there are some gonioscopic photos within those studies where you can see three different devices stacked up into the angle at once.

So I think the current thinking is spacing things out to a greater extent such that you don't have multiple devices in the angle is considered advantageous. I think the evidence did support effectiveness at least over the over the course of the expected use of the device.

With the question of MIGS, to my knowledge, there aren't any major trials looking directly at them, though I would emphasize that that MIGS procedures generally work on outflow enhancing outflow of aqueous whereas these both these implant that we're discussing are more around enhancing uveoscleral outflow. So, one could expect there to be a complementary effect since they are different mechanisms of action though I don't believe there is long term data to that extent in terms of use of this device versus this is an office based procedure. So, there are certain advantages to an implant that can be done at the slit lamp in the office as opposed to needing to go into an operating room space such as the other device that we've been discussing here today. So, relative strengths and weaknesses for both, but both efficacious in their own degree.

Mann, Patrick 1:28:24

Thank you very much, Dr. Mansberger and then Dr. Rose Rosdahl.

Steve Mansberger 1:28:32

Oh, this Dr. Manser. I had nothing else to add to this other than I agree with the previous things and thank you.

Mann, Patrick 1:28:41

Thank you. Dr. Rosedahl?

Jullia Rosdahl 1:28:43

Yeah. I just wanted to mention that the Durysta is an office-based procedure where your patient's sitting at the slit lamp versus the iDose in the operating room. And Dr. Liebman mentioned so, I unraised my hand, but not quick enough. Thanks.

Mann, Patrick 1:29:01

Great. Thank you very much.

So, let's move to our last two questions then, moving on to 9.

So, question #9 is both the pivotal studies and real-world data have demonstrated safety of the device in a short-term setting ranging from 3 to twenty-four months. And we're back to talking about the travopost post intercameral implant, do you have concerns about the lack of long-term data on effectiveness and safety? And if yes, how do these concerns impact your decision-making in patient selection and use of the device? And if no, what provides you with reassurance? And we'll start with Dr. Emerick.

Geoff Emerick 1:29:50

Yes, thanks. So, I would just go back to the Birdall study, which did go out to three years, 36 months. So, there is good evidence of both safety and efficacy up to that time period. The expectation with this device is that it will not last beyond or much beyond 36 months due to the design of the implant. There are other implants. There's an iDose which with about twice the amount of medication which is would of course last longer and so that has a lot of appeal the that it would not require replacement as quickly, but there again good evidence that there is three-year efficacy and safety for this and the Birdall study demonstrates that nicely.

Thanks.

Mann, Patrick 1:31:01

Now is there is there good studies out there addressing removal versus leaving it implanted and adding another one? I mean that that would be another one of the safety questions is that once the device is spent, is it left in place and if it is removed, is there any?

Geoff Emerick 1:31:10

Right.

Mann, Patrick 1:31:20

Safety concern with that.

Geoff Emerick 1:31:23

Right. Anytime you go into the eye, there is concern about the corneal endothelial cells and there are continuing ongoing studies that are looking at the safety of exchanging the iDose and I think the FDA is planning to review that sometime in in January the latest data on that. Removing the device technically should be relatively easy and replacing it not a concern. Again, it's just going back into the eye to have to do the replacement and that's the appeal of a longer-term device, but we don't have the data on the safety of the exchange procedure yet.

Mann, Patrick 1:32:21

And is there any concern with any you or any of the group with the idea that the that the removal hasn't been fully elucidated in the studies yet?

Geoff Emerick 1:32:35

No, I think we're just waiting for the data. Again, that the expectation is that the efficacy is going to be equal to the first implantation. There's no reason to question that. We'll see what that shows. The concern is just again the safety with the endothelial cells with the exchange and we'll be awaiting further data on that and again I think the FDA plans to release its opinion on that in late January.

Mann, Patrick 1:33:16

Thank you, Dr. Liebman.

Liebman, Daniel L.,MD, MBA 1:33:21

I would second a lot of this, some of this data is still forthcoming. The Shekeli's study from 2025 does involve the removal of I think it was 210. Patients total with removal of the eye doses with no noted in terms of the safety of the of removing the device. No significant issues were noted in the process of removing those devices. Again, that was for the purposes of studying the residual contents of the iDose but,

the device itself appears to be relatively straightforward to dramatically reduced. So, while we await definitive data on that, I think you could at least look to studies of that nature to look at least the device has been explanted on occasions under a controlled setting in the past without any noted substantive complications.

Mann, Patrick 1:34:23

Thank you. I saw Dr. Wandling is next.

George Wandling, MD 1:34:29

Yeah, just echo removal endothelial damage. But again, a lot of times that is addressable. If you have something, we can't get back the vision we lose from glaucoma. And so, we want to continue to lower the pressure. We can oftentimes fix endothelial cell damage with a ? and other things, and there's really promising injections on the horizon for replacing those cells. But additionally, the other thing that you'll hear is there's any time you go in the eye, there's a chance to endophthalmitis, although it's pretty darn small, but those are the things that are going to come up with any kind of repeat injection, whether that be Avastin or Aliya, Durysta or replacing an iDose. Thank you.

Mann, Patrick 1:35:15

Thank you, Dr. Cothron.

Nora Lee Cothran, OD, FAAO 1:35:19

I think it's important to note that one of the limitations of the ? study was it was done in Armenia and 100% of the patients were white. And glaucoma is a disease that disproportionately impacts African American and Hispanic patients. And the genetics literature does show that there is a difference in particular genes and maybe some of the function that may be within the trabecular meshwork or potentially how patients may respond to implant healing, scarring, things like that. So, I look forward to the data that the FDA is reviewing for explant in American populations and hope that the demographic is broad enough to actually cover the types of patients that we care for

in our communities.

Mann, Patrick 1:36:04

And thank you for bringing that up because you do bring up another kind of side question with that, especially with some of the earlier studies. It does look like most of like a lot of the earlier studies were more Caucasian ethnicity than anything else and does have any influence on your ability to extrapolate it to the rest of the populace in the United States?

Nora Lee Cothran, OD, FAAO 1:36:35

I don't have the ability to extrapolate it as I don't have a background in epidemiology or even genetics, just enough to be able to analyze the data as a former data analyst before I became an OD, but it does make me hesitant to take one data set and then the even the additional data set of the implant being administered in combination with cataract surgery that was also in a completely white population. And so I think it's extremely important that we make sure that in some of these communities that maybe the recipient of these types of devices is that we do have sound scientific evidence-based data that shows that it is safe within those patient populations and that they have the same type of outcomes that other demographic of patients do.

Mann, Patrick 1:37:26

And also in the American medical system, because I'm asking that there would be some differences. I don't know how many, but there are differences between countries. There are differences, I'm sure, between states alone, but between countries at least. I saw, I think Dr. Chopra next and then we'll go to Dr. Emmerich.

Vikas Chopra M.D. 1:37:43

I think the differences in demographics, I think it's an important point, but I think really, it's more important when you do surgery that involves a lot of wound healing characteristics on conduit based surgeries, trabeculectomies, Xan, tube shunts, things like that. But in patients who typically have MIG surgery where this the implantation and exploitation is not involving as much wound healing. It's about a drug eluding medication which has actually been found to be quite effective in all ethnicities and races. So, I don't think the differences are expected to be that great, I think. Still would like to have the data for sure in our population, but I would expect it to still have fairly equivalent pressure lowering among all. And if you look at the studies that are the pivotal studies, currently the level of pressure starting pressure was not as impactful either. It lowered pressures whether the pressures were very high or not as high, so in in percentages terms I think it is an important point, but I think in this particular case because a drug eluting device rather than actually a device that filters pressure, I think it'll be equally effective.

Thanks.

Mann, Patrick 1:39:02

Thank you very much, Dr. Emerick.

Geoff Emerick 1:39:07

Oh, I just wanted to point out that in the iDose pivotal trials, 19% of the patients were black. So, there was not a subgroup analysis, which would be nice to see, but there was like some attempt in those trials to have a more diverse patient population.

Mann, Patrick 1:39:27

Right.

Dr. Cothran.

Nora Lee Cothran, OD, FAAO 1:39:32

My concern isn't the efficacy within those populations as if we're discussing the implant and then the reinsertion of device over multiple times as a lot of doctors/surgeons may have been using this off label multiple times or at the times of other types of surgeries. I definitely recognize that there was a robustly powered phase three data that included patients of all different races. But my main concern would be the explanation and then the reinsertion of multiple devices.

Mann, Patrick 1:40:05

And thank you for bringing that up as well because that was another question to ask the panel about dual insertion. So, iDose frequently is inserted with IiStent or performed in combinations, I know there is a study about cataracts and I think is a single study, if they know more about the studies then please send them our way. But in terms of like with eye stent and the other mix or

other types of procedures, could you comment on that and we'll start with.

Dr. Emerick.

Geoff Emerick 1:40:46

Yes. So, on clinicaltrials.gov, there are two industries sponsored multi center randomized clinical trials. There's one that's comparing the iDose plus I stent versus I stent alone, so looking forward to results of those studies, but that's being looked at. And then the other one is Eidos TR with cataract surgery versus cataract surgery alone.

Mann, Patrick 1:41:17

There's no studies that have been completed for those topics. OK. Thank you, Dr. Wandling.

Geoff Emerick 1:41:20

Not completed, correct.

George Wandling, MD 1:41:28

I totally lost my train of thought. Sorry.

Mann, Patrick 1:41:32

No worries. If you think of it, we can come back to it.

And then this is definitely also in addition to the black population. The Hispanic population is also another large population to consider in this as well.

Let's move on to the final question. Oh, go ahead, Dr. Wandling, you remembered.

George Wandling, MD 1:41:58

Yes. So, again to reiterate, someone had mentioned it earlier, the logically doing a MIGS procedure with an iDose or one of these implants should be working on two different pathways for helping glaucoma and so they really shouldn't cancel each other out or have a destructive interference type of relationship there. And again I think most people are going to consider this as this is a drug delivery and not anatomic altering surgery, right? And so doing one that alters the anatomy like an eye stand plus a drug delivery really should make sense. Thank you.

Mann, Patrick 1:42:49

Though one question there would be the is there studies on effectiveness of doing these sequentially as in versus concordantly? So is there an added because we've already talked about how there's a diminishing return on subsequent treatments and at least that's what Dr. Chopra was talking about earlier. So, is there?

Is their evidence that doing these concurrently at the same time is better than doing sequentially?

George Wandling, MD 1:43:21

So, they haven't been able to show, they haven't shown tachyphylaxis except for maybe outside of ?. Someone can mention that, but that has not been shown with ? and I think most surgeons are looking at as not is this am I going to get one or point difference if I spread out the surgeries, but am I minimizing the number of times I'm going inside the eye right, even though the chance of endophthalmitis is tiny?

Or just doing surgery. Every time you have surgery, your risk of having drier eyes increase, right? And so those are the big factors that I'm considering, at least when I'm trying to combine surgeries is to minimize the number of times going into the eye.

Thank you.

Mann, Patrick 1:44:11

Thank you, Dr. Liebman.

Liebman, Daniel L.,MD, MBA 1:44:14

Basically I was going to bring up while I'm not aware of data to support a staged versus at the same time approach I agree there there's consideration of their there's a certain amount of small assed risk that's kind of already on the table when you're inside the I doing one procedure so.

So, yes, that to that would, I would, I would second that point to the generally we prefer to minimize the number of times that we expose the patient to the low, the low but existing risks of any kind of interventional maneuver.

Mann, Patrick 1:44:48

Thank you. We have one final question and then we can open it up to the contract medical directors if they've been having any burning questions that have not been answered yet and then we can close off on time. So, the final question is what ICD 10 codes do you consider appropriate for billing?

Of 0660T, which is the I dose insertion starting with Dr. Emerick.

Geoff Emerick 1:45:14

Yeah, so I would consider all of the diagnosis that are included in the indications for idose. So, acute hypertension, H40.05, all the open angle glaucoma, the H 40-point ones and not just primary and pigmentation capsular, but also low tension. I think we touched on earlier the importance of IOP lowering in patients with statistically normal pressures. So, there would certainly be appropriate.

To include as well, essentially anyone who is appropriately treated with a topical PGA and has an angle that is and meets the other criteria that that we discussed that would be appropriate for placement of the eye dose would be an appropriate.

Patient.

Mann, Patrick 1:46:13

Thank you. Do any of our other subject matter experts have anything to add to that?

Dr. Chopra.

Vikas Chopra M.D. 1:46:25

Yeah, I agree with Dr. Emerick, especially because sometimes the differences between normal tension glaucoma and open angle glaucoma or ocular hypertension are quite nebulous and difficult because if you look at the Los Angeles Latino Eye Study, which was over 50-5500 patients. In that study, the patients with defined open-end glaucoma, their IOPs were 17.3, whereas the normal were around 14.1. So, all those patients who had defined glaucoma with visual PLS with optic nerve damage did not have elevated IOP. So, pressures fluctuate all the time as we know. It's very difficult sometimes to know whether this is a pure low-tension glaucoma versus a high-pressure glaucoma. Sometimes it is obvious, but other times it's simply not because of the variation in pressures, the fluctuations in pressures and so it's best to have it available where you can lower the pressure in a patient who has glaucoma.

Thank you.

Mann, Patrick 1:47:28

So, are there are there studies then planned for one addressing the variability in the IOP you mentioned or your you or your colleagues have mentioned that night time there are spikes and then the secondary question are there trials to see if this methodology of lowering IOP is more beneficial for some populations than others?

Vikas Chopra M.D. 1:47:58

Yeah, I think you raised a very, very, very important point which actually has been discussed, in terms of how to design clinical trials. There is a new contact lens coming out, not the one now available now that's very difficult to tolerate, but a soft contact lens that'll be able to give us a full 24-hour pressure measurement in a patient. Once that's approved and usable, then we'll actually know what the IOPs are. There's a device that patients can use that can measure their IOPs in the evenings, but having control of IOPs throughout the 24 hour period is an important point and that's why in this study they had used three points, 8:00 AM, 10:00 AM in the pivotal studies of the iDose and at 4:00 PM initial pressures to do randomization because it pressures can vary. Obviously, we didn't have any data on overnight and that would be useful to have in the future.

Mann, Patrick 1:48:53

Yeah, especially with the normal pressure vs. glaucoma. I do want to make sure that my compatriots, my fellow contract medical directors, have a chance to ask you questions that I've missed or haven't been covered by the standard questions.

I'll wait for a second to see if anyone speaks up.

And while we wait for potential questions from our medical directors, is there any other last minute things that people wanted to say that were missed or would be important for this, remembering that we will of course love to get more information from you in writing and any of the?

Papers you all think would be that we don't have that would be important for us to look into when exploring this topic would be greatly appreciated. Dr. Liebman.

Liebman, Daniel L.,MD, MBA 1:49:58

Yeah, I think there's been a great conversation. One thing that I I've been hoping to just make sure is considered is the Hawthorne effect as it applies to any studies of this nature and Hawthorne effect being the concept within any of these studies where the effect of measuring of patients being measured or being monitored itself changes their performance and their behavior in a way that maybe isn't representative of real life situations. I think any of these studies here you're comparing a device or an implant to an active agent, something that requires administration like a drop, you're looking at a best-case scenario for the comparator group, which is probably not indicative of daily of real-world practice. I think it was discussed previously there's some good data to suggest that in the real-world patient self-administration of drops is highly suboptimal. In these studies, the patients are being tracked and are probably using their drops far more effectively. So, it's just one thing that I think is always worth bearing in mind anytime we're comparing someone that takes the medicine, something that takes the onus out of the patient's hands, comparing it to a previous standard of care that involves an onus on the patient.

That we're probably looking at a rosy comparator and a much more probably an exaggeration of the of the preceding standard of care than really exists in daily practice. So it is just something that I think is always worthwhile to bear in mind for any studies in this in this domain of sort of extended-release medications or anything that takes it out of the patient's hands.

Mann, Patrick 1:51:44

Thank you. I appreciate it. And then before we get to you, Dr. Wandling, I saw one of the contractor medical directors, Dr. Miguel Brito of Palmetto, raised his hand. So go ahead, Dr. Brito.

MIGUEL BRITO 1:51:57

Hey, Patrick, can you hear me, OK?

Mann, Patrick 1:52:01

Yes, we can hear you well.

MIGUEL BRITO 1:52:03

Great. Thank you. As a glaucoma patient, I'd like to ask what the efficacy is of these kinds of implantable devices when you realize that glaucoma is not a two to three-year disease. I've been a glaucoma patient for 15 years as a Hispanic male. So, what evidence do we have that these implants are going to impact glaucoma long-term when we realize it's not a short-term disease?

Mann, Patrick 1:52:42

And we can start with you, Dr. Wandling, since you had your hand up and then we'll move to Dr. Cothron.

George Wandling, MD 1:52:50

It's just I think that the word armamentarium was used earlier and it's as things develop, we are continuing to use whatever is best available to us with the fewest side effects and fewest risk, right. And so, every patient is, and we've discussed this before, is individualized. And so yes, this treatment may be not be the best treatment for some people, but for some people this may be the only option at this juncture.

That's why we're doing things like an eye stent and it lasts for X amount of time or in one of these intracameral implants that last for X amount of time. And , we may have to go back and do other interventions in three or five or 10 years. And that's just the frustration of glaucoma because it's a lifetime disease that continues to get worse with time. And then just the other one other quick thing I wanted to mention was that there's a Samuelson paper from 2021. That's really something that I like to go back to when I talk with patients about this or other colleagues.

And it was a quality of life study based upon the Istent pivotal study where they looked at VFQ 25 and the ability to get patients off their drops was really beneficial for people's overall happiness and things like that. And so, this is, this I think is an extension of that same idea.

Thank you.

Mann, Patrick 1:54:24

Thank you, Dr. Cothron.

Nora Lee Cothran, OD, FAAO 1:54:27

Thank you, I think about a patient that has glaucoma being on a glaucoma journey and as doctors we're now in the driver's seat of that journey with the patient in the passenger seat. I think glaucoma surgeons and anterior surgeons deserve every single possible tool to have within the armamentarium, that toolbox so that we can position these devices at the right point in time along the patient's glaucoma journey. It's one of the reasons that as a non-surgeon, I have some concern that I have expressed to colleagues about stacking multiple MIGs at the same time, and the

reason is because once you have a failure, then if a particular MIG is only covered once in a person's lifetime, now you've now that that patient no longer has that available and so I think understanding what we have in the toolbox both as optometrist and ophthalmologist and allowing the surgeon the ability to choose the right device at the right time of that patient's glaucoma journey does allow us to protect that retinal nerve fiber layer so that the patient has a robust visual system of nerve fibers that conduct in the visual system until the time that what I say when the angels come. So our job is to be very good stewards of the tools we have to use them very thoughtfully to care for our community.

Mann, Patrick 1:55:52

Thank you. Is there anyone else that would like to say anything else or respond to Dr. Brito's question?

Dr. Liebman.

Liebman, Daniel L., MD, MBA 1:56:04

Yeah, Dr., I appreciate your bringing a personal kind of experience to this question. I think you're absolutely right. Glaucoma is depending on when we are depending on when we diagnose it. Today in clinic I diagnosed a 45 year old and so we're talking a game of decades.

I tell my patients, I hope that they live to 120 and I hope that we're treating their glaucoma through then and that they still retain good vision. So, I think there's nothing in our, we use the word armamentarium a lot, there's nothing in our armamentarium that lasts the entire life cycle of the disease. Even if you look to the "gold standard" of trabeculectomy surgery and even a trabeculectomy is not expected to last a patient's whole life. If it lasts for a decade, that's amazing. So, I think a lot about real estate as a glaucoma surgeon and anytime I can preserve real estate state whether that's physical in terms of the not having to perform an incisional surgery that uses conjunctival space and causes scarring or whether that involves not using up another medicine class or basically anything I can do to move the ball down the field, buy ourselves more time with functional vision is a success. I think certainly the questions of value and getting the most amount of time for our input are important to think about from a health system perspective. But when I get excited by the prospect of devices or of interventions that provide me a new opportunity to buy ideally years of adequate pressure control before moving on to something else in the in the in the armamentarium. So, that's how I sort of think about how does a device with maybe three years of pressure lowering fit into a 30-year journey. It buys us another three years and I think we've discussed the reimplementation's. We'll see what the data says in terms of exactly how long this can buy us, but that is how I sort of see it figuring into that larger picture.

Mann, Patrick 1:58:19

Thank you. And if you can do it in 30 seconds, I'll give you the last word, Dr. Emerick, before closing it out.

Geoff Emerick 1:58:25

Oh, thank you. Thank you all for your interest in this topic. You appreciate this chance to discuss it. So, as was mentioned these are the first two intraocular implants that we can deliver drug into the eye where it is needed. Drops are really not a good way to get medication into the eye. I think a lot of people with early to moderate glaucoma, the worst part of their condition is the drops, not just the cost and inconvenience, really the life-altering side effects, dryness, irritation, stinging, burning. There are permanent changes to the eyelid that really affect quality of life later on. So, anything that we can do to reduce drop burden, I think, is really going to benefit our patients.

Mann, Patrick 1:59:16

Thank you, and I wanted to thank you, all of you, for your time and volunteering to come today to discuss these topics. We're grateful for the substantial effort you devoted to reviewing the evidence and for your thoughtful contributions today.

And we appreciate everyone's participation. And with that, we conclude this meeting.

Vikas Chopra M.D. 1:59:49

Thank you.

Geoff Emerick 1:59:52

Thank you.