Introduction to Dendritic Cell Therapy

Welcome back everybody. It is a distinct honor to be with Dr. Matt Halpert to hear today from Immunocine. This is going to be a very interesting conversation.

Dr. Halpert will recall, when I first met him, I was highly skeptical because for over 20 years of my career in the integrative oncology world, I've had patients fly all over the world to receive Dendritic T-cell vaccines.

And frankly, I guess there's no nice way to put this. It's been very lackluster at best and dangerous at worst. And so it's just something that I've always really steered my patients away from to consider something I was never, trained in and something that I just was hopeful.

On paper, it seemed like a cool idea, but the reality was very different. And a lot of patients spent a lot of money and a lot of precious time doing therapies that did not have a lot of, return of investment.

So when I first learned about Dr. Halpert, I had a patient who basically, asked for forgiveness later. He's like, I've done it. And now I want to tell you what I've done.

And I was like, how did you. How dare did you do this? I was so upset. And yet my mind was blown and continues to be for the other patients that I've learned along the way.

So, Dr. Halpert, thank you for being here and helping helping change other people's minds as you did mine and helping us know what's in the future of this amazing, amazing, upgraded, updated therapy.

So welcome. Thank you. Thank you for having me and for keeping an open mind. I honestly don't disagree with anything you just said. and so, I'm excited that I get to be, so cutting edge as to, reeducate the field as to what Dendritic Cells can truly do when used correctly.

I love it, I love it. Well, first of all, what the heck is a Dendritic Cell like? Tell us about this therapy because it has been around for a long time.

People have probably heard about it. Maybe if you've been tried it, tell the listener what a Dendritic Cell therapy is all about. Right, absolutely. so our immune system is designed to protect us from a ton of threats, right?

Bacteria, viruses and mutated cells that are going to become cancers. and so to do all of these different things, we have many different types of immune cells, that are responsible for different components, different, activities within our body.

Dendritic Cells were discovered in the 1970s. So we've known about them for a while, and it didn't take long for scientists to realize that they essentially sit atop the immune system pyramid.

They are the, as we like to say. They are the generals of the immune system army. it is their job to see the threat, whatever that threat might be, including cancer.

And then organs, eyes. you know, digest, understand and organize the proper and complete immune response needed to eliminate that threat. And so when you catch the flu, I can tell you with absolute certainty your Dendritic Cells become knowledgeable of the flu of this virus.

They understand what is needed to eliminate it, and then it tells the rest of your immune system go do A, go do B,

go do C. This is what you're looking for and this is what you need to do.

How Dendritic Cells Coordinate Immune Response

Your body gets rid of the virus, not 50% of the virus, and leave behind a whole bunch you know, left. But to get rid of it completely and then resolve into immunological memory, which will further protect you.

And so this is the job of the Dendritic Cell. It is the job to see the threat and respond to it. you know, quite frankly, when you have a runaway infection or, a runaway cancer, it is the fault of the Dendritic Cell.

more often than not. And we are suffering from something called immune ignorance, where your immune system has failed to activate correctly and it's not doing its job.

I let this, you know, I was kind of the way I've always thought about the immune system, and you just really, gave the story of this so beautifully is that it's it's basically based on these three are so recognize, respond and remember.

And what you just described is that the T-Cells are really the Dendritic Cells are very much in charge of that process. And what is happening today is this immune system evasion, this immune ignorance and even T-cell exhaustion is a word that I run or a concept that I run across a lot, which is, you know, maybe, maybe you could describe to the listener what what is T-Cell exhaustion in this arena?

Like, what does that mean typically to you? Sure. So yes, absolutely. Immune exhaustion, T-cell exhaustion is it is a problem, especially in cancer. And it is as of 2024.

It is something that scientists worldwide are working on still to, to overcome. So our immune system very complex, very self-regulating. you do not want autoimmunity.

that's that's not something that our bodies typically want. And so, in the event of a prolonged fight. So we're not talking about eliminating a virus after three days.

We're talking about maybe you have a tumor and maybe it's a pretty big, bulky tumor. And this is going to take months and months and months to actually eliminate at some point, your T-cells, which are the, the soldiers in the, the immune system army that are actually fighting and destroying the cancer cells.

They start to and I'm going to personalize them a bit here because it's their cells, but they almost start to worry that maybe they are attacking the wrong thing.

Maybe they have become auto immune. Maybe there is, you know, because why is this fight taking so long? And so they start to raise up, certain receptors or proteins, which we have collectively called checkpoint.

and they are effectively brakes on the immune cells. And they are saying, if I'm wrong, if I'm attacking the wrong thing, please turn me off. And unfortunately, many cancers have learned how to exploit this.

And they see that and they turn it off. And so now even if you had an immune response, the cancer has figured out how to to turn it off to become invisible again.

And the term for this, it's those immune cells now quiet down is exhausted immune exhaustion. the good news is that one, there are ways, a variety of ways.

And I know you with the, you know, all the integrative things out there, there's there's more than one way to help overcome this, to either block that, exploitation of the cancer or to actually have the immune cells not express those markers.

and something we've seen with Dendritic Cells used correctly is that these the, the effector cells that spin off from

them are much slower. I won't say nothing. 0%.

Nothing is 100%, but they are much slower to, express those checkpoints. they last a lot longer. The term is durable immunological memory. As you were referring to there.

And so we see that these cells actually persist longer and longer and longer. And we've published on this actually repeatedly. And, you know, in Science Translational Medicine and a variety of other publications about how important these effector cells are in our ability to overcome cancer.

and so by using Dendritic Cells correctly, we see correct effector cells.

T-Cell Exhaustion and Immune Evasion in Cancer

And that's nothing to say about the Dendritic Cells, which can continue to persist in the lymph nodes and continually pump out more and more fresh affect our cells to fight.

And so all of this works together to help, push back will say, or I want to say completely overcome, but push back the potential threat of immune exhaustion.

Amazing. And this is a perfect segue, because you talk about this, you use the word very the concept very carefully of when it's done correctly. So how do you and the Immunocine team do this differently all the way from like soup to nuts, as in my grandma would say, how do you guys differ from the other offerings on the market? Yep.

So of course we get asked this a lot. and there are other there have been other Dendritic Cell attempts, and there are currently other Dendritic Cell attempts and potentially, you know, to an immunologist such as myself, the differences are, very in my face.

but to, you know, to my mom who is not they all look the same. So we are trying to get better at how do we truly explain the differentiator. So here's here's what I'm going to try to to say.

Right. We know Dendritic Cells can do the job if if you have survived up to this point, if you are live right now listening to this interview, then your Dendritic Cells have function correctly.

And that includes, again, viruses or, you know, whatever else, including micro cancers. very often there is a mutation in one cell will become two and instead of stopping in two becomes four, four becomes eight, and so on.

Something is wrong. And if it's not fixed inside those cells, it is now up to your immune system to eliminate it. That is its job, and it has done that successfully.

So we know it can do it. And we knew that in the 1980s and the 1990s we know it. And so there was and there have been big pushes to, okay, if we're going to use your own immune system to overcome cancer, let's go to the top.

Biology says it's through the dendritic cell. so let's get that to work. And so collectively, you know, this is of course many years ago now, but people get okay, we've got them, we've got dendritic cells.

What do we do? How do we educate them to see the cancer and then tell the immune system what to do? And so people have tried many, many things. They said, well, let's take some of the cancer and chop it up into what is called the lysate.

And let's, let's throw the, let's say onto the dendritic cell. The dendritic cells will eat that and then present it to the effector cells. And the effector cells will go fight.

And you know what? you know, if you can see my graph, sure. There's something, I'm not going to say that does nothing, but it's underwhelming. And people were okay. That wasn't great.

and people have tried. Well, what if we use specific cancer peptides or specific proteins and throw it on the dendritic cell that injury cell eats it, presents it.

The effector cells go. And, okay. I mean, it's still underwhelming. others said, well, maybe we need to get the cancer information inside the dendritic cell.

And so that leads us to use cancer genetic information, DNA, RNA. And let's put that inside the dendritic cell. Those cancer markers will be actually made in the cell. Now chopped up process the dendritic cell present to the effector cells.

The effector cells will go do their job. And okay, again an underwhelming response. And this was unfortunately just repeated failures where we're just not we know it's the right cell, but we're seeing minimal improvement in the clinic.

and you know, people just could not figure out what what's missing. We're missing something. And as a result, of course, many in the field, a lot of money and interest said we have to move on.

We can't just sit here on dendritic cells. Let's move on to other places in the immune system we could hijack. And this leads to Car-T cell therapy, checkpoint inhibitor therapy, things that have a role or spot.

But by nature they're artificial. I mean you're now not using the dendritic cells. So you're admitting we're not going to have an optimal immune response.

We're probably going to have to target a single antigen. We you know, because we can't use the dendritic cell. We can't target many antigens. We can't get all the signals.

again, not that there's nothing there but that you just have to accept that you're missing a lot of important pieces, including black boxes that we still don't know as of today.

Nice. Yeah. so let me make it sound even more depressing. Was then a lot of people said, okay, well, we're going to stick with dendritic cells. And now this here's one thing that bothers me.

I still see groups out there that continue to to tell using dendritic cells with cancer lysate as if it's new, or we use cancer mana as if it's new and that's, you know, their marketing team maybe does a great job, but it's not New wave that was tried.

That doesn't work. It. Yeah. Yeah, yeah. And it's almost it's it's I, I have moral quandaries with groups that continue to just propose the same thing.

So why do you think it's going to work? Right. Definition of insanity. That didn't work before. It's not going to work now. Some groups have said, well, we have to try something else.

I mean, we've got to get them to go.

Why Earlier Dendritic Cell Approaches Fell Short

So we'll throw the cancer lysate on. But what else? What else can we do? And you know, hey, they respond to the flu. Let's throw flu virus at them. And when they respond to the virus maybe they'll respond some to the cancer or let's use Coley's toxins or bacteria or BCG, or something.

And honestly, some of those do hit pathways that are involved in the process. And maybe it when it goes from this to this, maybe there is an improved response.

I'm certainly not going to say that there's just absolutely nothing to adding these other signals. there can be. Right. Still not doing the complete job.

We still know that. And if you think about it, we're still within the realm of artificial stuff. Cancer is not the flu. Cancer is not bacteria. you if your body's eliminated cancers before it, does not need to see bacterial signals to do the job.

It still doesn't make sense when you get down to the the brass tacks. And so all this to say, we're now we've move forward in time from the 1970s to, you know, around 2005, 2006 when our, my research group in the Texas Medical Center continued to work with dendritic cells and said, we're not doing any of that.

We are missing a signal. We are missing a mechanism that's just at the end of the day, that's what's missing. And one of the only times I'll sound arrogant is to say we found it.

And so from a I'm going to explain it here and from a, eagle eye view, it's going to sound very simplistic. it is more complex than this, but here it is.

You've got groups out in cancer lysate on the outside of the dendritic cell, which then is engulfed and put through a pathway. You have groups trying to put cancer, RNA inside the cell, which is processed and put into a different pathway.

Has anybody tried to do both? and I know that sounds you're thinking that's it's not that big of a deal. Well, we we tried that and maybe we're thinking one plus one will equal two.

Or maybe we're thinking, but maybe one plus one lethal three. Let's find out. Maybe there's something there. And when we did that, we saw one plus one.

It did not equal two, did not equal three. It equal 9450. It went off the chart. in a way where it's not this is not additive. This is not just because we added more stuff.

Clearly we flipped a switch. Click the the dendritic cell is responding. It's not just accepting the material and presenting it. It is recognizing something here and changing its whole behavior.

And so the more we get into the nuts and bolts of it, the cancer, if you can see my hand here, the cancer information put on outside the dendritic cell is eaten and has been processed on the way in the same material put on the inside of the dendritic cell and present on the way out.

There is a moment in time where this there's actually a giant mechanism here looking to see. Do I see the same stuff outside in and inside out? And if it's at all different, this doesn't happen.

But if it's there simultaneously and overlapped completely, it is that fine tuned. The dendritic cell says, all right, game on. This is the threat. This is what we needed to see first to do a response.

And I am telling you we have done the work. We have studied mechanism. We have published a variety of peer review, papers in different science and medical journals where even if this is off by just a smidge, it doesn't work.

And if you actually restored the match, it does. Interesting. Biology does not. This is not a fluke. A massive amount of energy goes into regulating this pathway.

It is so fine tuned and results in such powerful movement where when we see one plus one equals some gigantic number, it makes us relook at every graph that we've looked at before.

It's we're looking here at is something one x or one and a half x or two x. If the dendritic cells can do 154 x, why are we even looking at two x is nothing.

That's baseline right? Right right. It's not a surprise. All other dendritic cell treatments have failed. None of them have activated this pathway. This pathway leads to a massive reorganization of the genetic transcriptome of the dendritic cells.

And it's all natural. We haven't I've no drug, no toxic. Just the person. Never. Yeah itself. And I know I talk too much, but it's just it is such an immutable, finding that when we find that the immune system can respond so robustly to something that seems so simple.

Right. Well, all biological things we understand seems simple after we understand it. Right? And so when we see that it made us all back up and go, oh my gosh.

Yeah. It's not a surprise that these have not worked before. No one's done it. It has to be basically the first step. And if you don't do it, I don't care what else you add.

I don't care what else you do. You you're look, we can have a race and you can have a race if you're not on the right track in the first place, you're not winning.

You've got to be on the right track. Are there other things you could do? Add this to this changes? Maybe. But if you don't start from this fundamentally critical, aspect to how the immune system operates, you're playing with half a deck.

I mean, you're just not going. It's not likely you're going to get there. You've got to have this this we call double loading. It is too impactful to ignore.

And so, you know, nothing I've said is even remotely specific to what the target is. I didn't say it's a specific cancer or a specific tissue. It's very it's terrain centric.

Truly. I mean, that's my you know, it's like it's it's it's re it's it's reestablishing those three R's. Yes. The body doesn't inherently was meant to do.

Yeah. That's all we do. We use biology to fix biology. No I like it. It's you know and it's it is it is in a sense that simple. Obviously what we do in the lab to enforce that, to happen and reintroduce that is more complex.

But conceptually it is surprisingly simplistic. And, typically when we present the data to either our peer or scientific peers or even to the FDA, they kind of have this light bulb moment themselves where they they say, oh my gosh, like, this is actually going to change how we can integrate immunotherapy into our clinical practice.

And so science and medicine is, you know, take time. It takes time for paradigm shifts, especially if what you're proposing is anti dogmatic. Right. But it it is it's extremely important which is why we must push it forward.

We must get it into the clinic. It cannot be a discovery that goes. Just an intellectual exercise. It is not. Yeah. Yeah. It's got to be much more. Right.

So are you are you able to speak to just like a general. Like what is the process like for a patient. Like just as far as, I mean, first of all, the feedback I get from you, from the, the folks who come into immuno scene, is that the, the just the care, the team approach and the team care and the the patient experience and the workflow.

I know that sounds like that shouldn't matter, but as someone who's been through this myself and watched thousands and thousands of patients go through this, the thing that can be the most difficult of the cancer process is just dealing with.

It I guess I just know I say, I say like like really bad customer care, really bad workflow, really bad communication really falls dropped that is really when you're literally fighting for your life, that's the last thing you want to be worrying about.

And so I know that sounds like it shouldn't make a difference, but it really does. And you guys have done this well. But beyond that front desk experience and the patient workflow experience, what happens next?

How do you make or create this vaccine? If you can speak to that at a high, high level, that'd be great. So so

people understand what this is. It's not like you're giving a pill or and you know, it's getting you explain what's going on. Yeah.

No, it'd be much easier if it was just a pill, but unfortunately, yeah. and, this is one of the reasons, you know, big Pharma does shy away from this and it does work.

But it's not ever going to be, Yeah, yeah. yeah. So there's a couple of questions in there, but I'll address them for sure. So, you know, I'm a scientist, right?

I have a PhD.

Immunocineu2019s Double-Loading Method

I used to be in the lab doing research. I'm not myself. I'm not a medical doctor dealing with patients. And as we've jumped into this, as I've jumped into this and I've talked to more and more cancer patients, in, you know, predominantly in either the United States or Canada, I have learned some interesting things about how health care is practiced.

And I want to be careful. Obviously, what I'm about to say is not true of every doctor or every oncologist or every practice. There are absolutely very thoughtful and invested groups and people out there. But generally speaking, I don't think I was.

Many of our patients, after they come through our program, will tell me, and by many, I mean, you know, 98% really all of them will tell me this is such a different experience.

And I'll say, well, how so? And they will say, even just from the beginning, I mean, when I call you guys and one information, you give me 45 minutes to an hour and a half, answer all my questions.

You're very transparent. You're very thoughtful. I, you know, everywhere else I call, maybe I get a 5 or 10 minute whatever. You guys respond. All my emails, you're constantly just from the get this is from people that are in our patients.

Yet these are from potential prospects who've paid us nothing. You know, we will talk to you. We will answer all questions about what we're doing, much like we're doing right now, so that you understand and can make a thoughtful, educated decision.

Apparently, very often at home they will, you know, they'll say, it takes me four days to the eight days to get response to an email. And when I try to talk to my doctor, I get ten minutes.

And then I'm shuffled around to admin. And it's just very hard, for my my doctor really has to look at my chart to even understand, you know, or remember what my case is.

It's just hard to be able to have that kind of there's no real relationship ship. I'm a patient. It's just a doctor patient relationship in the most statistical sense, and it's just not what we do.

our doctors, we don't, you know, I mean, maybe this is not great, but we don't have very much admin. it's our doctors. It's our our we we provide you with that doctor that that quality time.

You can ask all your questions. We will answer them, good or bad. We will give you an answer. We will over on. Sure. Yeah. note I want to point out something that's very interesting is I have referred a lot of folks.

And to you guys, by the way, I want people to understand that there's no exchange here outside of, like, I need a patient to have some good resources and you've had to turn people away.

Yes. Because you're not, like, just bring them all. Everyone's welcome and we'll come to that in the next and the

next question. But I just want to like the integrity here of you saying, we're going to spend the time with you.

We're going to see if you are a fit for this opportunity and for fit for you. And you're very clear if you if it's not, you're not, the transparency is really beautiful and that, there's disappointment, obviously, when a patient's hopeful that this is going to be a fit.

But it's also refreshing when you guys aren't just like, this is a one size fits all. Everyone welcome. So please carry on. Yeah, I know in many ways that's a horrible business model.

We turn down a lot of, applicants and and I don't say that trivially. I mean, I do understand it's actually it's a very heavy decision because these are people's lives.

Many of them want the treatment at all costs. They want to go through this. We do a full medical review. we don't charge anyone for that. But we're going to look, we talked about this next, but we want to see if this is going to be safe.

And this is going to be effective. And obviously, it's all with a good faith understanding because no one can predict the future. But absolutely, we are not a one size fits all.

We are not right for everyone. And if we honestly cannot look you in the face and say we think this is a good shot for you, we will not take your time or your money.

I just we just can't do it. Thank you. but provided we get through the medical review and you are approved and we, we then have a call with you and go over the, you know, you're approved and.

Yeah, yeah, yeah. Yeah, yeah. you know, we'll then work on it provided you want to proceed. And, you know, you can sign the informed consent. You continue to want to do this.

we will build a schedule and that schedule, just to be real brief, but it's about six weeks, and it's not inclusive. You don't have to be with us in Cancun for six weeks, but it takes about six weeks, all told.

you know, we'll try and get you to Cancun as soon as possible. Admittedly, some time slots are getting full and we are rapidly growing and adding to our abilities, but, we will try and get you down within a month.

and when you come to Cancun, week one is going to be a baseline week where we're going to do baseline scans, baseline blood draw, a baseline review again to make sure everything looks safe and copacetic.

we're going to do most likely will be a biopsy within that week. as I was saying before you. Fresh tissue for this, you need that. That's a must. It's a must have something biopsy able and it can't be blood.

It's got to be tissue. Correct. We need to double load your dendritic cells with the target information. And so we need that. And yes, things that have been unfortunately somewhat destroyed or degraded by paraffin or etc.

for pathology scoring we can no longer use we need fresh or cryo preserved tissue that we can extract good solid genetic information as well as make a protein library from, because we're going to have that double load and activate that pathway.

so it's usually in week one. That's one of the only things we do in the procedure room of one of the three Full-Service, private hospitals. We're going to be cautious.

It is a biopsy, but it is typically outpatient. you know, we don't this is usually not major surgery. and then we'll we'll mobilize your white blood cell count for that week, followed by an A for resources.

Just a large blood draw, because that's where we're going to get your immune cells from. week two. We're now in the lab. To be clear, our lab is an ISO seven certified positive pressure clean room lab that is certified by the

Mexican Co, which is the Mexican FDA and is actually one of the there's only 11, I think there's only 11 labs in Mexico that are as certified as the lab we use.

and so, we're working in the lab, our molecular biologists, our scientists are now making your dendritic cells, making the correct cancer, extracting the correct information.

And at the end of that week, we now load your dendritic cells with this, patented method that is unique to us. And this is just, again, it is to be clear, no one else does this, right.

I don't care what they say. They do not do this. They certainly don't do it correctly. And if you look carefully, some of the things these other groups brag about are not brag about, brag about.

We only do one shot. That's not very good. That's not how the immune systems do. You need to educate and titrate up the immune system? Yeah, yeah. And some of the things I see where they're bragging, like, why are they bragging?

That's not a good thing. but anyway, you get your first treatment now around day 14 from the beginning. And that'll actually come with a previous day where you meet with the oncologist.

We do more blood work. We make sure everything looks appropriate. you will then get the treatment. Importantly, those dendritic cells are introduced near draining lymph nodes.

Patient Workflow and Treatment Process in Cancun

dendritic cells do not traffic well from an IV infusion or from an intradermal injection. And we know that we've done that for years. And in one doing that is ignoring.

Yeah, yeah. we do ultrasound guided injections near functional lymph nodes. and essentially after that point, your immune system is going to ramp up for about a two week period.

And so at that point you are you can go home, you don't have to stay there. your immune system will ramp up in you whether you're on the beach in Cancun or you're at home with your cat.

and then we essentially repeat the process at the end of week four and at the end of week six to really boost that immune response and push it towards durable memory.

and so that's kind of our four process of getting your immune system educated in the game, seeing what it needs to see and doing its job. now basically creating an ability for your body to fight the cancer itself.

Yes. I mean, everyone wants complete remission, of course, but you can't even get partial remission if you're not doing the right thing in the first place.

I mean, you have to start with and you just you have to start. Your immune system is twiddling it. Thumbs get it going. Right. And then we have good opportunities. Yeah.

Doctor Alpert who is who is contraindicated for this. What Conte what keeps people from being a good candidate for this therapy. Yeah. No. Absolutely.

So some of it is just very, you know, black and white, very obvious at this time. We're not treating blood cancers because we have not done the research validation that says we can isolate the cancer cells out of your blood in a way that we can then load your dendritic cells.

So we do need you as the patient to have a solid tumor mass. Yeah. It needs to be safely accessible. if it's not, if your own doctors won't touch it with a ten foot pole because it might you might, you know, there's a critical artery running through it. And this could be dangerous, right?

We probably aren't going to either. so it needs to be somewhat safe. And I mean, it's it's unfortunate we have some prospects who they have a half centimeter mass.

And honestly, it's too small where we are not completely confident in our confidence. We need to be that we're going to get a good tumor tissue sample.

and so we do typically need patients to have lesions that are at least two centimeters in diameter. You know, there's a margin. But we're trying to get a pencil eraser amount of and tumor tissue.

That's the question. Can we safely get that? we're not treating patients with brain lesions at this time. Not that it can't work. In fact, as you know, one of our clinical trials has worked very well in brain cancer.

It's just we thinking. Kuhn. We don't yet have the medical supervision for dealing with the brain. you need to have an immune system. I mean. So basically, that's what I was going to say next is patients who've been so heavily, heavily pretreated, who now basically do not have a functioning immune system, are not a good candidate for this.

Is that so? This is this is the danger. And right here, Doctor Halpert, is there. So many are the frustration, not danger, or how many patients are so overly treated that we've not nothing left to work with.

At the end of the day. Yes. I want you to be coming in earlier in the game versus last resort. Yes. I mean, I want to, I'll pause this answer to answer something or address that.

And that is, you know, people will ask us, you know, do you only take stage four cancer patients? And. No, I mean, that's not look, if it's stage four, we have to all have our eyes open.

It's going to be very difficult at this point. I mean, in, in, technically speaking, stage four cancer is not considered curable. when you reach that point, it's typically, how can we buy time?

How can we put you in a temporary remission? Those are palliative care. we have seen better, you know, far better statistics than that. But it's coming to us at the very end when you're completely beaten up and you're looking at weeks left to, to live this is not magic.

This is not some snap of the fingers and you walk out. We do not possess that. That ability. I you know, it is much better if you can come and do this earlier in the game and I you know, as you know and as might make common sense with the fact that all we're doing is biologically fixing you with your own biology, we are not removing any treatment options from your plate.

If you still want to do standard of care, be it chemotherapy or radiation, you absolutely can. If you still want to look at future clinical trials, you absolutely can.

If you still want to look at integrative or holistic approaches, you absolutely can it. This affects you in a sense as much as if you had the flu, right?

If you had the flu, would you still be eligible for chemo? Of course, that isn't going to change that, but getting your immune system activated and fighting and surveying your whole body and doing its job earlier on in the process is going to help prevent metastases.

It's going to help confine the cancer. It may even eliminate the cancer if the immune system is still strong enough, rather than let's wait until you've done 19 rounds of chemo, you barely have a sputtering immune system left, and now we're going to try.

It's like that dusty lawnmower in the garage that you haven't turned on for five years, and now you're trying to get it going. It it's not impossible, but it is obviously much trickier at that point.

Interesting. And so, my gosh, you guys are bringing so much innovation to this space. It's really exciting to see. I

want to know, in closing, what are you and immuno seen most excited about on the horizon within your own center and maybe in the world at large?

Because this is a very beautifully evolving field right now. No. Yeah, absolutely. So, yeah, I'll answer kind of both questions within our own paradigm.

I mean, as you know, and we haven't actually explicitly, you know, discuss this, but Immune seen is offering this dendritic cell treatment in Cancun, basically via compassionate use to good candidates.

Right, to people that if you have it is sad to say, but I mean, if you have two weeks left to live, this is not for you. We don't want to take your time or your money.

You need to have some time, some fight left, some ability to actually do this. But we are not this science, right? I mean, you hear me talk about how phenomenal it is and you're, you know, a listener right now might be saying, if it's so phenomenal, why are you why is this only in Cancun?

And the answer is it's not, we are doing clinical trials. This science is in a variety of trials throughout the U. S that, of course, are sanctioned by the FDA.

And because it's not target specific, we can go after many cancers. We can go after glioblastoma, a very aggressive brain cancer. We can go after, pancreatic ductal carcinoma, a form of pancreatic cancer.

We can go after angio sarcoma, we can go after refractory melanoma and triple negative breast and, many. And these are at various stages, right? pdac is open.

Who Is and Is Not a Candidate

right now, you can get this if you have pdac, please, inquire, we will send you to Baylor College of Medicine, and hopefully you can get in the trial there if you have and you have sarcoma, we will refer you to our site at M. D.

Anderson where you can hopefully get the, the the treatment there. And if you have glioblastoma, that trial actually has wrapped up. I can tell you we had no attributable severe adverse events.

And the clinical outcomes have been impressive enough that the FDA did grant this a fast track designation. Yeah, they looked at it and they said this needs to move faster.

They are currently reviewing this for potential accelerated approval, for us to move faster. and also based on those results, we did, win a Breakthrough in Cancer award, which will actually help fund even more clinical work.

We are this science is making its way through clinical trials, and to help overcome the stigma that dendritic cells cannot work. We, the scientists, the business people hate us for this.

They really do. It is not the easiest business model. But we said, well, what are the toughest cancers we can? We can move the needle in glioblastoma pancreatic.

If we can use dendritic cells to move the needle there and show improvement, knowing that, you know, this will evolve, this will get better. Where what cancer do you think it couldn't be effective in?

And that's the whole point. This science is almost cancer agnostic. So it should be part of all treatment modalities. Again it can work with standard of care.

It can, it can't. We're not saying you have to take all that or even away if you if you want it. But add this in at the time of your surgery where some tissues being removed.

Get this vaccine made, get your body in the game correctly, all results will be improved. Whatever they would have

been before, the odds are now better.

So we open this in immuno seams so that we can have the legal and ethical abilities to offer this to patients that are not eligible for one of our clinical trials.

We feel that that's important because as important as trials and statistics are, this is just biology that's not going to change. And not everyone can wait ten, 15 years for this process to bear out.

and so I'm excited because it's still going to take time. But when we show this is truly effective in more than one cancer, light bulbs will start to go off that this really should be just a part of a baseline treatment of all really most or all cancers, right?

The immune system doesn't really care if you're cancer or even the pancreas or your prostate or your neck. Your immune system is protecting all. Your immune systems and ecosystem.

And that tumor happens to live in that ecosystem, and you can engage it from the ecosystem. So I think that's what's so beautiful about this and so elegant about this very terrain centric about this.

And so, Robert, what like parting words would you offer to this community? Because what I feel you're doing is you're offering kind of a hope chest here of some other options and opportunities on current and on the horizon.

Any parting words? Oh, I could have so many. All you can call them and talk more. There are so many more details here, but I wanted to give you a teaser or a taste of what they're up to over there.

But but yeah, Dr. Matt tell us. I will, I will say this, because a lot of the, the, a lot of cancer patients don't know this, and they need to know this.

Again. We're not here to bash standard of care. There are many times where chemotherapy or radiation, or hormone therapy or targeted therapy are appropriate.

Clinical Trials and the Future of the Therapy

There are times where we as a team will tell a candidate, we actually think your cancer's too aggressive right now for this treatment, and you would be better served getting it under control or something harsher.

So I want to be clear about that. But when you go to any of these esteemed institutions Andrew Anderson, Johns Hopkins, Sloan Kettering, Harvard, they're great, but they are in a sense bound to offering you standard of care.

They are almost going to look at a list. This is your cancer. And based on group metrics of previous studies, this is the treatment protocol. I'm not even going to get into how disgusting it is that often those are dictated by insurance companies.

so that's a different discussion. But and that's what they're going to offer you. Right. And even if they're at the point where all they can offer is palliative care to buy time, that is what they're going to offer you.

They will not put there. It's a liability. They simply are not going to deviate from that. Most will not, because if they do and it goes wrong, they they could get in trouble.

But you as the cancer patient, as scared as many are sometimes we'll hear that and we'll think there's no hope. They will think there is nothing left for me to do.

My colleges has said this is a tough cancer. And with what we know, chances are slim. And I think it's important to know that as immunotherapy has taken more center stage, as there have been more scientists such as yourself with what you study with with what we study, I mean, you know as well as anybody the data we collect and use to orchestrate our ongoing program and how we do this.

There are actually other that I'm going to call it validated avenues out there. A lot of people will think it's either your mainstream doctor, like your oncologist or snake oil salesman, who are just trying to take advantage of you.

And make no mistake, they're out there. But there actually are a growing population of, doctors and scientists who who look into the science, who look into the personalized aspect of a patient's cancer and say, you know what?

There are actually some options here. And it may not be mainstream yet. It may not be FDA approved yet, but that doesn't mean it won't work. And so I definitely want to give these people, as a parting word, some degree of optimism and hope that you do need to find the right groups.

And and I'm sure you, as part of the whole Summit and your program can, can direct patients either within your own program or, you know, affiliate or programs, people that, you know, are doing this correctly.

and there are options. There are things that can be done. And you and I have boasting patients hit a no evidence of disease mark, that were previously told you have absolutely no shot.

And so you know, after that emotional draining of just the the emotional toil of dealing with your cancer and potentially being told how bad it is. Get yourself up a fight and you have there are tools for you to fight for your life here.

There are tools to get you back to health. And so I just I think what you guys are doing with this Summit and the continued efforts you you yourself, Dr. Winters, to make to get the word out to these people about there are other options are things we can do, is it's not just good, it's necessary.

and so I, I just personally thank you for that because it's made it possible for me and our group to do things like this as well. So. Good. Well, it takes a village, doesn't it?

So I appreciate you being part of it. And, like I said, innovating and offering hope and offering innovation in such a huge way. It's just it's mind blowing.

So thank you so much for your very valuable time today, Dr. Halpert. And I'm looking forward to folks knowing you and following up with you soon. All the best. Absolute. Thank you.