Introduction and Dr. Kanu2019s Background

Welcome to another episode of Reversing Type 2 Diabetes Summit 2.0. And I'm Dr. William Hsu. I'm the co-host for the Summit. And today it's wonderful to have Dr. Kan, who is going to be joining us.

And I'm going to just switch the view here a little bit. So, Dr. Kan, thank you so much for joining this this Summit. Love to tell us. Could you tell us a little bit about your area of expertise and your background?

Thank you so much for having me. Well, by the way, it's a pleasure to be on the Summit and to share such a important topic. There's nothing more important to help people with than diabetes because it's a condition that affects a vast array of different, you know, health problems.

And for my background, you know, I'm a board certified chiropractor and apologies. I'm also a board certified in functional medicine, in integrative medicine, and from my perspective is looking at the big picture.

Right. Because if we just focusing on diabetes as simply a blood sugar problem, I think we're going to miss a lot of other co-morbid conditions that people may not be aware of that may be also plaguing them.

And so my background as a person like chiropractor neurologist is I always see people with presenting with a lot of neurological symptoms. Now this can be central nervous system symptoms like brain fog, depression, fatigue, anxiety and memory issues, but it can also be peripheral nervous system symptoms such as sensory issues, numbness, tingling.

They may have balance problem that's a result of their peripheral neuropathy, although you can have central base balance problem like cerebellum issues.

So, so that's very common. So when we see people with diabetes for my background is we're looking at this neuro metabolic integration. Okay, so that's actually a term that I kind of created 20 years ago because I saw what's coming down the pipe in research.

What Neuropathy Is and Why Diabetes Causes It

I saw this huge you know, this factor of metabolic conditions impacting nerve function, right. So and diabetes being a metabolic condition is definitely one that has tremendous impact on nerve function anywhere where where you have nerves.

But it's not just brain, not just in your feet. And this is something that hopefully we can shed some more light for people to be able to understand why they're having symptoms that may or may not be diagnosed and may be plaguing them.

So, Dr. Kan, looks like you've taken care of so many patients with this, with these issues, and maybe we start from the beginning. A lot of our audience may be asking the question, Why do people with diabetes develop neuropathy and what is neuropathy?

And can you help us understand that a little bit? Yeah, I'm I mean, that's a great question. You know, I think a lot of people think of neuropathy simply as numbness, tingling in their hands and feet in the periphery.

They can't feel properly. And really neuropathy simply means that there's pathological condition of the nerves. I mean, some nerve is being damaged, simply speaking.

And when that happens in the sensory nurse in your hands and feet, then obviously you're going to have sensory

symptoms, which is one of the most common complications of diabetes, Type 2 diabetes and type one is that you get neuropathy, but know that this glycation end product of diabetes, this high blood sugar condition, damages nerves wherever they are in the body, whether it's peripherally or centrally meaning in the brain.

Your neurons rise because all nerve tissue, whether it's in the brain or in your sensory nerves, are all composed of neurons which are nerve cells. And so there's nothing that's more inflammatory to nerve cells than having high blood sugar.

Now, specifically, why is neuropathy so common in people with diabetes is because these nerve cells that are at the hands and feet, specifically the sensory neurons that that mediate, you know, light touch or pain and temperature, they're called type C nerve fibers.

And these are myelinated, which means that they don't have a male, and she's on the outer covering up the nerve that protect them, and also the very small diameter nerve fibers.

And because they're very small, that means they're very delicate out. So they're the first one to go when you have any kind of inflammation or damage in the body.

So this is the why they are very common in people with diabetes. At this inflammatory condition, you're going to start to get these sensory type changes.

However, I would say that there are other nerves that are also very small in diameters. These are your A-delta fibers. And these A-delta fibers actually innervate your autonomic nervous system and this is the part of the nervous system that controls everything that's on autopilot.

So those nerves, because they're small, they also get damage really easily. So you can have neuropathy that can affect a sensory nerve causing sensation changes.

But then you also have neuropathy damaging the autonomic nerves, causing what's called disorder anemia. And this may be something that's very, very common, but the symptom can be very wide ranging, sometimes can be subtle and very, you know, commonly missed diagnosis for people.

So let's come back to this to clarify for all of our audience here. So there are different kinds of nerves in the body, right? And there are the sensory nerves that are responsible, as the name implies, right?

The nerves that the skin, the senses. Right. That touch the he sensing the vibration. So that's one type of nerve. And you mentioned that could be also a motor component to that as well, is it.

And then there is the nerves that connecting to our organ systems and that's actually really important to know. So there's not one single symptom. There are many different types of symptoms.

Exactly. When you damage the nerves, depending on what type of nerves you damage, you can have symptoms in that area. And diabetes is not discriminatory as far as what type of nerve it will damage.

Sensory vs. Autonomic Neuropathy Symptoms

It's just a smaller fiber nerves like the sensory nerves and the autonomic nerves there, the first one to get damaged. So let's let's go there. The sensory nerves.

What are the symptoms people can expect? So are some of our audience may be asking the questions, How do I know if I have sensory neuropathy? Yeah, in the early stages, right?

Because you don't get sensory neuropathy overnight. It's a condition that develops over time. So you don't just wake up one day and all of a sudden, wow, I have numbness, tingling. I don't feel anything.

I mean, you might just wake up and feel numbness, tingling, but to be sure, that has developed over long periods of time until you finally feel numbness and tingling.

But that disease process may have been going on for six months, a year or two years before you even get to that stage. And this is why early diagnosis and detection and really being really aggressive with treating these things are really important because there's a window of time for you to get that nerve function back and too long without nerve being damaged.

There is a point of no return where you cannot get that function back anymore. So then that neuropathy becomes permanent. But in early stages there's a lot you can do.

Dr. Kan, What's the insight there? Why do nerves don't come back? Why do they not come back just like skin when you had a cut, Right? The skin can heal over what's unique about the nerves that makes them difficult to come back.

Right? Because, you know, it depends on what type of nerves, by the way. So in, say, your neurons in your brain, central nervous system, these are post mitotic cells, which means that they don't go through cellular division mitosis.

And so that what that means, whatever brain cells you came into this world with, that's all you got. You don't get to make more brain cells. This is why if you have a spinal cord injury, you're paralyzed for, you know, for for life.

At least at this point, we don't have a way to to fix it. In your peripheral nerves, you have a time frame, right? If you have a compressed peripheral nerve, like in your pro natur muscle or, you know, in your on your brachial plexus, you have a period of time to grow that nerve back, to decompress that nerve, so to speak, and let that nerve function come back.

But if it's been way too long, you start to get trophic changes. You don't get the nutrients that to the endings, the nerve. You lose the capacity for that nerve function to come back.

I see. I see. And a lot of the people probably this is probably the easier type a neuropathy for our audience to recognize because there are associated symptoms, either pain or numbness.

Now, you mentioned another one. Our audience may not be as familiar with. That is the autonomic neuropathy. Let's go there. First, describe. Please help us understand what is autonomic neuropathy?

What are the symptoms? Yeah, for for the layperson, you know, the autonomic nervous system is kind of, you know, something that's a concept that many are not familiar with.

But it, in fact, is the system that runs your body, right? 24 seven whether you're awake or not, whether you want it to or not, it's doing his job to keep you alive.

And the autonomic nervous system controls everything that's on autopilot, including blood, vessel constriction and dilation, blood pressure control, heart rate, your lung function, sweating response, pupil dilation, digestion.

So these are all controlled by the autonomic nervous system. And you can have neuropathy of the autonomic nervous system. And when you have neuropathy of the autonomic nervous system, the symptoms can be very diverse because typically with autonomic you're going to have cardiovascular, right?

It's going to impact blood vessel construction and heart rate. You can have digestive issues because the enteric nervous system as well as the vagus nerve, innervate the gut.

So if those systems are damage, you're going to have digestive issues such as gas, bloating, reflux due to lack of stomach acid production. You can have, you know, irritable bowel syndrome, you know, constipation, alternating diarrhea, so you can have GI problems.

So cardiovasc that can manifest as lightheadedness, dizziness, you can have cold hands coffee, you can have high pressure, high blood pressure or low blood pressure or unstable blood pressure.

You can have arrhythmia. So these are cardiovascular. We talked about gas, gastrointestinal, and then you can also have pseudo motor symptoms, which involves tearing or sweating abnormalities.

Either you have dry eyes or dry mouth, or you can have excessive tearing or excessive sweating just depends on how it's impacted. So any urogenital, by the way, you can have like urinary incontinence and, you know, urinary frequency.

So symptoms can be all over the place and that can lead some people to think like, man, I'm just falling apart. I got like 50 symptoms. What the heck is going on when in fact there's one underlying thread, which is your autonomic nervous system being attacked by this neuropathy, and therefore you experience symptoms and a whole bunch of different places.

This is actually such an important discussion because a lot of listeners may be experiencing these unexplained symptoms for years, right? And it's difficult to know what they are.

They probably have been through many different clinicians and try to figure out what these are is. So help us understand then how do you how does one make an accurate diagnosis is of either the sensory or peripheral peripheral neuropathy versus the autonomic neuropathy?

How can we tell? Yeah, So the the number one way is basically through understanding what what what is the mechanism, Right. What's driving this problem first. Right.

So then that's why the summit that you're holding is so important for the listener because they understand what's going on with diabetes. Why is this metabolic disease such a, you know, a devastating condition now?

And as we discuss, how is it so devastating for the nervous system? So first, through understanding, right, the patient have to empower themselves with information.

And then secondly, they have to go to a practitioner who can step back and look at the big picture. Right. And then couple to ask the right question. That number one thing we learn in med school is, you know, the history is everything.

History is what lead us down to, you know, the working diagnosis. And then we run lab tests, we do physical exam to confirm those things.

How Neuropathy Is Diagnosed and What to Ask Your Doctor

So I think doing the right history with a doc, with a provider and then doing the right physical exam for no sensory neuropathy, you obviously got to do sensory neurological exam, right, to rule out things for autonomic neuropathy.

Then you have to again, a lot of us sometimes, right, the astute doctor will be able to pick up on these. Oh wow, you have symptoms and a whole bunch of different areas.

It sounds like it's autonomic. And then we can do autonomic testing and then, you know, combine that with the history of diabetes that may put a picture together.

There's some type of neuropathy issue. The autonomic. I see, I see. So maybe what could be very helpful for our listeners is tell them what are the patients not asking when they see their practitioners.

MM That's a great question. Well because they can go to the visit and. Right. You know I used to see this all the time. A patient goes home and the wife ask or the husband asks, What did you guys talk about at the, the medical visits and the patient just blanked out.

Right. And so what advice do you have for for our listeners? What are they not doing to being a good advocate for themselves at these these visits, these medical visits?

That's a great question. I think there's two things that they need to advocate or pay attention to during a medical visit or doctor visit. Firstly, you have to go in armed with some level of information.

That's what the summit would do, right, to help them to understand what are some of the things that could be a complication. So in this particular session that we're talking about neuropathy, you need to be aware that you can develop sensory neuropathy.

You can also develop autonomic neuropathy that can that can manifest as what's called disordered anemia, and that can show up for some people as plots postural orthostatic tachycardia syndrome or orthostatic hypotension.

It can manifest as cardiac autonomic neuropathy, which cardiac autonomic neuropathy is. You know, once neuropathy hits the heart all cause mortality goes way up by many manyfold.

It's a bit, you know, dangerous complications. So it's something to be aware of. So you have to know these information. And if you recognize in yourself symptoms of just anemia, write dizzy, lightheaded.

Your blood pressure is not stable. It's one thing to have hypertension all the time. It's another thing to have your blood pressure go up and down depending on position.

Change like these are things you need to be aware of. And then you bring it up with your medical provider. Hey, I have these symptoms of blood pressure changes and dizzy and my head and heart symptoms, you know, consider autonomic neuropathy.

Would you please check me for it? So. So you were advocating this is very interesting, right? So you're advocating asking your practitioners. But I ask for it because sometimes with doctors, their time is limited.

They may not know all the concerns that you have. You know yourself best. You've got to be your own doctor working with your doctor. So you've got to bring it up with them.

And then the second thing is, on the way out, ask the doctor to summarize. What did you find? What is your finding? What is your assessment of not just the finding?

I would say like knowing the diagnosis is one thing. Knowing the root cause is another thing. As the doctor, what's the root cause now? If it's a good doctor, they'll look for the root cause.

Also, I would say if there's a good doctor, they don't know the root cause. They're just tell you, I don't know the root cause. I'm not in charge of the root cause.

I'm just here to manage or sometimes, you know, go to another person for the root cause. If you're being honest, that's good. That's transparency, at least, Right? Exactly.

Exactly. Yeah. So since you brought up the idea of the root cause and love to talk to, spend a few minutes on what? Now we we know what the symptoms are.

We, we, we know that diabetes is linked to neuropathy. We know it's related to sensory. And then we also know it's related to this or another neuropathy and we now know what to ask when we go to the doctor's office.

But to be armed with even more knowledge, tell us a little bit about what is the root cause of these very amorphous symptoms that can range from pain to to to nausea and to fluctuations in blood pressure?

In your view, what are the root causes? Well, in the case of diabetes, obviously, the root cause is high blood sugar. Now, if there's type two, typically associated with lifestyle and this this is good news because of this lifestyle, that

means you have a say.

You have a choice in that you can make a different choice about the lifestyle. And when I say lifestyle, that means what you eat, how you move, what you put into your head, right?

I mean, stress management, all these things can have an impact on diabetes. And so then there's a root cause. Now, in some people, the root cause for diabetes can be, you know, endocrine disrupting chemicals.

We know BPA and fire retardant materials and all these people don't talk. About that enough. Right. So we look at obesity, but that's not the all the answers.

It's something to be aware of. Right. And so so for diet type two, there's definitely this chemical burden that can, over time create insulin resistance.

So that's something to be aware of. So so that's route pass. But then the other side of that is mechanism, right? So then the mechanism of neuropathy, which is the topic of this talk, is because of the diabetes causing events glycation end product.

Root Causes: Blood Sugar, Lifestyle, and Autoimmunity

These, these glycated damage is damaging the nerve. That's one of the primary mechanism why you get neuropathy. But that and the second reason mechanism why people get neuropathy is actually due to autoimmune because once you get diabetes, you get your inflammation level is way higher at baseline than people who don't have diabetes.

It's an inflammatory condition. It's a metabolic condition that results in inflammation. And this inflammation can drive tissue damage, lead to increased cytokines.

And then when you have a lot of tissue debris and a lot of cytokines, that's going to cause a lot of possibility for cross reactions and molecular mimicry where your immune system can develop, develop antibody to those tissue debris that's floating around.

So now you have autoimmunity against your cell tissue. And it's very common because neuropathy or diabetes caused nerve damage. Now you have proteins of nerve floating around.

Then you can develop antibodies to those proteins floating around. So you then now you get neuro autoimmunity. And if it happened to be autonomic nerve protein fragments floating around that you develop antibody to, there you have your autonomic autoimmune neuropathy.

So in that particular case we need to manage it as an autoimmune condition. And how do we do that? You know, by dampening various immune pathways and modulate the immune system and identify triggers that can cause a cytokine release and just dampen the inflammation response overall.

So this is an important discussion because, okay, now we know the causes, but treatment is always, always what our audience wants to know, right? What are of some sort of the conventional approach to treating neuropathy?

What are some of the more creative and emerging ways to look at the modalities that that counters these these terrible neuropathies or either the conventional or what are expected as you go into the doctor's office?

And then what are some of the more emerging thinking around this? Yeah, conventionally, you know, it's always about managing symptoms, right? When you have neuropathy, you have nerve damage.

There are no drugs that I know of that causes your nerve to grow back. You know, if you have high blood sugar and that's damaging your nerves, there's no drug that'll reverse that damage until you give your blood sugar control.

So I would say the treatment for no apathy is actually to manage your blood sugar, right? So from the conventional model, it's going to be a metformin that's going to be your all of your blood sugar managing medications.

And, you know, if it's type two, then obviously we're not talking about insulin here. But, you know, I think in the early stages of neuropathy, if you can get that agency under control and reverse diabetes, as you guys are talking about in the summit, then the neuropathy can actually improve in early stages.

So so the key and the key point number one is getting diabetes into remission, right? That has the potential of altering the course of neuropathy. That's important.

Dr. Khan What else? Well, then the other. Side of it. And so, yeah. Besides so conventionally speaking, besides diabetes medication, you know, from a neurologic neuropathy standpoint, you know, it's, it's medication to treat neuropathic pain.

You know, it's either pain meds or, you know, they may use Cymbalta or or, you know, other type of neuropathy medication, you know, to to dampen pain.

But none of that's addressing the root cause. Right. So even if they can reduce symptom, which is the right thing to do, sometimes you still need to work on the underlying root cause and the mechanism, right?

So there's nothing more important in diabetes management than to not only watch out for the conventional treatment to to do that if it's necessary, but to concurrently do the lifestyle things.

Because if you're taking diabetic medication, if you don't exercise, if you only reduce carbohydrate intake, if you don't manage stress, you don't decrease inflammation, the medication is going to do, you know, only it's only going to take you so far and really the way to actually reverse, if the goal is to reverse, then it's lifestyle.

If the goal is just to manage it, the medication will do right. But managing it means to keep the disease in existence, but not getting in better. So if we want to reverse that, we've got to work on the lifestyle.

So you're saying that there is actually almost a complementary approach here that while we have to seek symptom relief because that's what troubles to the patient there, it also has to be a parallel approach to addressing the root cause through lifestyle changes.

And this may be a great segway to tell us a little bit about your practice and and how do you offer a different way of treating these very vexing health problems such as diabetic neuropathy?

What's the what is different about your approach? What's your philosophy there? Yeah, and thank you for allowing me to share that because, you know, for me, diabetic neuropathy, I think for anyone with any chronic condition really, and not just diabetic neuropathy is to really for the individual patients to understand their condition to the point where they can become their own doctor.

But that doesn't mean their license health care provider, then they can prescribe, but meaning the patient should be able to know what's the underlying reason that's driving their disease and driving the symptom.

Treatment Approaches and Patient Empowerment

Right. Because if you just treating symptom without understanding what's causing the symptom from a mechanistic perspective, then you're just treating symptoms and you're just trying different things and you can miss it and you're not even addressing the root cause.

So my main goal is to teach people at a very high level, as much as I can right? for the layperson, for patient to understand as as high level as possible, so then they can start to advocate for themselves.

That's the way that I do it. So a lot of is education and a lot of it focuses on lifestyle changes, right? It's going to be

exercise. It's going to be diet change.

Sure, there are some supplements that can be very complementary, can have a great role in assessing the person, getting into that, you know, functional, optimal, you know, physiological function.

But I think it's really up to the individual person to make the choice of how aggressive they want to be. And so but once they're armed with information, they'll they know, oh, this the target, then they can decide how aggressive they want to be.

But many times people don't understand target. But when I say Target, I don't just mean a landmark or 0b1c target. That's not being I mean, the mechanism of what's driving the VA one C, if somebody is just eating too much carb, then that's really what they need to do, right?

They need to reduce carbohydrate intake. Now, they may have cravings, they may have stress or they they don't know how to do that. And so we got to help them to make these lifestyle changes.

And supplements can help kind of make that transition easier. But it's always about teaching them the why behind the what that they're doing and then giving them a reason to work really hard towards something that can really change their life.

That's very well said then. I think patient empowerment as number one rights of individuals can be armed with the knowledge and the attitude to go into and seeking solutions for themselves.

So Dr. Kan, is there anything else we haven't covered that you think it's relevant to a listener or maybe listeners, a loved one? They're struggling with diabetic neuropathy.

Any additional advice or pearls that you can share with us? Yeah, absolutely. I think one thing that we haven't touched on as much with slightly touched on was autoimmune neuropathy.

And this can mimic diabetic neuropathy because, you know, autoimmune neuropathy can, you know, the symptoms are same numbness, tingling and pain in the extremity, but it can be caused by a gluten sensitivity.

I see that very often in my practice where gluten can cause autoimmune neuropathy. I see people with environmental toxin exposure, they end up with neuropathy.

I see people with infections, chronic infections that can cause autoimmune conditions that can drive neuropathy due to an inflammatory condition. So so people need to be aware what are the different ways that this can happen.

And the many of these mechanism actually there's a lot that individual patients can do to make things better through nutritional supplements, through diet and lifestyle change.

And finally, I want to leave people with that. You know, neuropathy is a progressive condition. You can't reverse it in early stages, but if you don't get on the path of reversing this condition early, it's going to be progressively worse and worse and worse.

And then what that means is permanent loss of function. And that's not something you want because you, you know, when you can't feel your your feet, then the risk for falling increases dramatically.

And then that becomes a, you know, a risk factor as the older you get. And when it becomes autonomic neuropathy, that also causes problems because just autonomy in general increases all cause mortality, increases cardiovascular risk.

So this is all things that people need to be aware of that neuropathy is not simply just losing sensation in the feet. That's there's much more than that for people with diabetes.

Lots is at stake and there's a point of no return. So get on it early. So that that's an important message there. Right? There's good news and there is not so good news.

The good news is got to catch it early, address it early and or else the the the consequence could be could be quite impactful is if we're too late. Well, Dr. Kan thank you so much for this fantastic conversation that we have.

I hope our audience finds it helpful if our audience wants to learn more about the type of medicine you practice, your approach and just simply want to learn more, how can they find you?

Thank you for letting me share. They can find me online. I'm all over YouTube. A lot of free resources. There are videos. Just search. Dr. Peter Kan, you see the ball Head a Chinese guy pop up.

Also on my website, askdrkan.com. Dr. Kan, thank you so much for participating this. Another fantastic episode of Reversing Type 2 Diabetes Summit 2.0.

Thank you.