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Transcript for Podcast Episode: 017

Role of Cannabinoids in the Management of Diabetes

Hosted by: Dr. Lola Ohonba

Hey, guys. Welcome to another episode of Let's Talk About Medical Cannabis with Dr. O. I'm your host, Dr. Lola Ohonba, the CEO of WCI-Health, founder of WCI-health your alternative health and wellness store. We help people get and stay well using the healing powers of a botanical.

On today's show, we'll be looking at the role of cannabinoid in the management of diabetes. But before we go into today's show, allow me to do some business. Our regular housecleaning. This show is for educational purposes only and should not be taken as medical advice. For your medical needs, please do reach out to your health care provider. Over the counter supplements, including cannabinoid products, are not FDA approved. And we are not claiming that cannabinoids or supplements cure, treat or heal any diseases.

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So you wanna grab the information you need, get it straight to the point. And that is what your book Pharmacies Guide to Cannabis: Perspective of a Nonconforming Clinician. That is what it does for you. So like I said on today's show, we'll be looking at the role of cannabinoid in the management of diabetes. So what is diabetes? How can we detect it? How do we know what's going on? Basically, diabetes is made up of group of diseases that affect how our body uses glucose. Is not just using glucose. It also affects how our body process protein and also fats. Glucose is a major energy that the body uses.

The brain uses energy in form of glucose. And when our body does not have enough glucose, we can have what we call hypoglycemia, basically low levels of sugar. When our body has too many glucose, we have what we call hyperglycemia. And then when the glucose level in the body is not controlled, it may lead to other major complication. So how do we manage glucose?

Basically, insulin is the hormones in our body that is produced in the liver and this is the hormone that helps in the management of glucose. Basically, it helps the liver to take in the glucose and convert the glucose into fat or energy that a body needs. And whenever the body does not have enough glucose, the liver also releases this stored glucose that was stored in form of energy. It releases it back into our body to use. So like I said glucose is very essential to your human health and we all need this for the energy.

What are the causes of diabetes? Diabetes means when there is excessive glucose. More than what the body needs. If the body is not able to effectively store the glucose in form of energy, then it starts accumulating in the bloodstream. So when we have assessed glucose in our blood stream, that's when we say we have diabetes. What are the types of diabetes that we have? We have to type one diabetes in this type of diabetes is mostly come on in younger children in younger adult. It does not depend on food. This is as a result of not enough insulin is being produced by the particular person.

So basically for individual that is suffering from type one diabetes. The insulin is not produced in the quantity that individual needs. So basically, this does not depend on food. Most of the time when you say people have Type one diabetes, they are not big because we tend to say, okay, people that have diabetes are big, but when you see people do have type one, they are relatively younger individuals and they are not big. So you cannot just assume, oh, somebody that has diabetes has to be big.

No, it doesn't necessarily have to be that. Type one diabetes generally has to do with genetic predisposition. Basically this is based on genetics and in some cases it can be due to geographical location as well. So what the next one we're looking for is that type two diabetes. Most of the time when individuals are overweight, basically we have excessive fat or excessive sugar deposits in the body when these sugars are not excessively converted into fat and is accumulating in the blood stream down. We have Type two diabetes mellitus. These are most times are based on food. Some time it could be genetically predisposed to. Basically what that means is that some individual their genes makes them susceptible to have Type two diabetes.

Another type of diabetes that we will look at is called gestational diabetes. In gestational diabetes like you hear gestation, it means pregnancy. This is a type of diabetes that develops during pregnancy. So a lot of the time when the woman gave birth to the baby, the diabetes resolves itself.

But sometimes some of the women, the diabetes sometimes is not resolve after the delivery of the baby. So that can also occur. What are the risks factor when we talk about diabetes? The risks factor in age. Basically, women over 25. We are predisposed to have diabetes. Does that mean it's everybody? Of course no. It's not everybody. Our weight is also a contributing factor.

And when we say a weight, when we have body mass index, BMI, greater than 25, then we us get into a deep level of overweight. That is where we need to start being careful. And like I said, just like in type one diabetes, in Type two diabetes, there can be a family history that means there could be genetic predisposition to death as well. People that have had given birth to babies that are big, they can be predisposed to have type two diabetes. And also for women, that have had stillbirths. There is also the tendency to be predisposed to diabetes in those individuals.

Other risk factors that could lead to type two diabetes include lack of exercise, high cholesterol level, especially the bad guy. The low-density lipoprotein, LDL. High LDL level is a bad guy when we talk about high cholesterol.

Then there's also a condition called polycystic of ovary syndrome. In this kind of syndrome, there's a history of irregular menstrual period in women and also there is a tendency for obesity, excessive hair growth. These are the risk factors or predispose some women to polycystic ovary syndrome.

So next, we will be looking into the complications that can result from having diabetes. What are the complications? The first one, well, we'll be talking about is the heart disease. Some people will be like, how does we go from having a diabetes to a horse having cardiovascular disease or heart disease? Basically, one day we have excessive sugar in our body in the blood stream, this sugar can, as it's flowing through the blood stream that tends to clog the little arteries on veins when they block the arteries and veins, then the blood is not able to flow effectively through the parts of the body that needs it. Like, say, the heart or even our lungs.

So when the blood is not able to flow because the sugar, the glucose is blocking the vessels. This can result in a blockage to which, if not quickly taken care of, can result in a heart attack or strokes. Another part that we look at when it comes to diabetes is the neuropathic pain.

How does that work? In neuropathic pain, basically, this sugar that we have circulating in the body when the vessels are not effectively able to carry blood to the part of the body that needs this, the nerves surrounding these blood vessels can get damage. And when the nerves are damaged, it results in pain. These nerve pains are what we call neuropathic pain. So basically,

when we see that situation, the neuropathic pain we start feeling is kind of tingling, burning sensation.

The other complication that can result from diabetes is called nephropathy. Now, what is nephropathy? Nephrons little, little vessels found in the kidney. Like I said, the kidney is where waste is created. That's where we are, all the waste products in our body is filtered through the kidney. So this sugar, the glucose in form of sugar that goes into the kidney because the sugar was a little bit bigger. So that tends to block the vessels and just like in our blood stream. They tend to block the vessels of the kidney. The nephrons. So when these vessels are blocked, then the kidney is not able to successfully filter or take out the waste product that we need taken out of our body and this will eventually result in kidney damage.

And that's the other complication that we can get from excessive sugar diabetes in the body is called retinopathy. When you talk about. I know your guys will be like, okay, doctor O. Slow down. Slow down here. Yeah, slow down. What are all these big terms? Basically, I'm going to explain retinopathy. When you talk about retina, you're talking about your eye and in the eye. there are blood vessels, little tiny veins and iris that carries blood to your eye. That's why we are able to see.

So when we have retinopathy, that means the vessels that is carrying blood to the eye those are blocked. Why? I mean, that would make sense from what I have previously explained. When this glucose in form of tiny, tiny crystals of sugar aggregates in the vessel, tiny vessels and tiny veins surrounding the blood in the eye. The blood vessels are not able to effectively carry blood to the eye. So this can eventually result in blindness if it's not taken care of.

Other complications that we tend to see in diabetes patient are the amputation of the lower extremities. Because there is so much excessive sugar in the body, this gives the bugs like the bacteria, the fungal, it gives them like is like a culture for them to come on and take. They basically come and leave in there. So when we have so much sugar, just like you put sugar on your table, bugs start coming in and this causes the body to have excessive infection. So for people that have diabetes, they are very susceptible to infection.

And when it comes to lower extremities, like I talk about in the neuropathic pain, because some people that have diabetes, they are not able to feel in there, especially in the lower extremities. When I talk about lower extremities. I'm just talking about your leg, especially the lower leg. The arms but mostly your fingers, the toes, but mostly the legs and the fingers. They are not able to feel because the nerves surrounding those are part of the body is being damaged by the excessive sugar that is being aggregated in nerves over there. So average individual might not be able to feel when the nerves are damaged.

So when you are not able to feel say you are going to the kitchen and there is a nail, you step on a nail and you don't even know. Coupled with the fact that there is excessive sugar in the body that is causing infection. There could be speedy, fast infection. To that part of your body that you step on the nail. For people that have diabetes, if that is not quickly taking care of

because they cannot feel the pain. The infection can spread and it can result in their lower extremities being amputated.

So most times when you go to the doctor or the doctor will tell you if you have diabetes to make sure you do your lower extremities hygiene. You will have to check to make sure there is no cut. Then your where some people with diabetes stockings to help with blood circulation into that part of the body. That is a major, major complication. And so we tend to watch out for that.

Another complication that we can see is there because it's the sugar in the body is being converted to fat and is being stored. So excessive sugar converted to fat can result in high cholesterol and even the high cholesterol has been implicated, the people that have high cholesterol, studies are shown that a sudden increase in the rate of Alzheimer's and you can also increase depression, not just infection rate.

So other than that, how can we manage diabetes? The first way we can need to manage normally when we have any condition going on, any ailment. We don't want to just jump into medication, pharmaceuticals. We want to first do non pharmacological therapy. So what are the non-pharmacological therapy that we can use when we are talking about diabetes? Pharmacological therapy will be diet. First of all, we have to get high fiber, low calorie diet. When it comes to diet, we have to talk to our healthcare provider, our nutritionist, and work with them to see. Because other people, some people might have co-morbidities, basically some other diseases or that condition going on.

So we want to consult a nutritionist, to give us the ideal diet that will be good for both. Overall, the general consensus is to use high fiber diet, like rich in green leafy vegetables. That's what we want to look at. The other ways that we can also manage is exercise. It's recommended the average person should at least exercise like 30 minutes a day. If one is not like about 150 minutes a week. If one is not able to exercise on a daily basis, you can. Yes. Okay, I'm gonna try to do it maybe weekend, maybe three times. But the bottom line is that we want to try to get up to now 150 minutes per week of medium impact exercise. Like swimming and walking, fast, fast paced walking. Those are some of the ways people use.

And other than that, for some people, if diet and exercise does not work, then we bring in pharmacological therapy. When I talk about pharmacological therapy, I'm basically talking about medication. So what are the medication that we use when we are dealing with diabetes? The first main line of first line of therapy is metformin. Metformin is what your provider will recommend as a first line. Generally it's effective because it enhances insulin sensitivity for some people.

They are not able to know their body in a case of Type one diabetes, most of the time do patient the individual is not able to synthesize their own insulin because there is damage to the pancreas to that part of the body. The pancreas that is synthesizing insulin. So the beta cells of

the pancreas is what is affected in type one. But in in Type two diabetes, the body can produce their own insulin.

But sometimes the body is not able to sense. It's insensitive to insulin. So what metformin does it enhances, it helps the body to be sensitive to its own insulin. And we also have other products like we called them. Look up, go on like protein, the glucagon. If you have excessive sugar, you can give glucagon to help. So the glucagon is like a protein.

Those are the products are the baieda. Zenatide. The victosa and the glypicide. The glypicide also commonly used. But some of this product they are a lot of side effects that comes with it. Some it can have G.I. gastrointestinal side fair for some other product like the powglitazones. Those ones can also have cardiovascular disease is being asked to sit there with those Paul Glitazones, or nuria. All those types of product.

So when you're looking at this situation, are you looking at. Okay. Already diabetes can result in cardiovascular disease. So if you're taking other medication, they have the tendency to also cause cardiovascular disease. That can be problematic. Finally, when you talk about pharmaceutical therapy, pharmaceutical therapy is not complete without insulin. So after we have try oral medication or the injectable injection, like Bayada and they are not working. Then you bring in insulin. Insulin, like I said, produced in body. We have it in the short acting form like Humalog, the Novolog. Then we have long acting insulin like the Levemir and the Lantus.

So these are some of the pharmaceutical therapy that is used. So after we have tried all the pharmaceutical therapy and we are not effective, how can cannabinoid help in the management of diabetes? In our previous episode we've talked about the endocannabinoid system how it's like the robocop of our body. It maintains balance and homeostasis? That's what endocannabinoid system does.

But in the case of diabetes when you are taking in a lot of sugar and it's not being converted enough, the endocannabinoid system might be dysregulated basically can be overwhelmed. In this situation whereby endocannabinoid system is not able to maintain the intake and outgo, in and out of balance that could result in what we called dysregulation of this system. So basically in that situation the endocannabinoid lost its ability to to regulate the body. And if that is not taken care of, it can result in diabetes going worse.

How does the cannabinoid help? Basically THC has been shown most people anecdotal evidence, people that take cannabinoids say THC helps them to eat. Even using dronabinol, marinol in HIV AIDS to help with the weight loss due to HIV AIDS. So THC based cannabinoids generally have been shown to help increase the appetite. So when we have THC is always binds to CB one receptor which CB one receptor with the THC and the whole endocannabinoid system. So if you have your endocannabinoid system is not working, do you take your THC and there's no way to control or to convert the food that you are taking in to that?

This can be very problematic. Studies have shown that when they gave experimental rat CB one receptor antagonist. Antagonist, basically what it does is block the CB one. The CB one is where the THC binds to, which will help you to eat.

So when you block that receptor, experimental rat was shown to eat less, they didn't just eat less. They also store less fat. So basically when CB, one receptor antagonist analog was used in an experimental rat, they found out that the rats did not eat as much. It's not that it didn't eat as much. It also stored less fat.

So basically that is one aspect that we can use in the development for pharmaceuticals basically to develop a CB one receptor antagonist. But also in the same experiment, they find out that yes, they did the experimental mice was able to eat less, but at the same time, these mice that are showing signs and symptoms of depression. So basically this antagonist is yes, is making the episode the subject to lose weight by not eating as much. But it's not just doing that, it's also preventing the joy. It's taking away the joy from this experimental rat.

So basically what's going on, and that is what makes sense because part of why people use cannabinoid like THC, that it makes the euphoria. It helps you. It makes you excited. It makes you happy. So when you block their receptor, that is making you happy. Other things are going to be affected. So more studies definitely needs to be done along the line of CB one receptor antagonist to see how maybe we will might need to choose the type of people that will be able to use those kind of products, if it's ever developed.

Maybe people that have psychiatric comorbidities might not have to use it. Or to find other ways to make it work. The bottom line is that, yeah, we want to lose our weight. By the same time, we have to be happy.

We cannot be either/or. So more study needs to be done in the areas of our CB1 receptor antagonist. When it comes to agent like CBD. CBD was shown in the clinical studies to reduce the incidence of diabetes in experimental mice. While the untreated mice were found to develop diabetes in significant numbers. Also genetically modified obese mice was also shown to have less complication, such as diabetic retinopathy and neuropathy when given CBD in clinical trials.

Other than that, the other agent Cannabinoid that was looking into is the THC. The Tetra Hydro cannabin varin. THC was shown to reduce glucose intolerance. Like I said, some people are not able to tolerate glucose. So THCV has been shown to reduce glucose intolerance in clinical trials. THCV was also shown to improve glucose tolerance. It improved glucose tolerance and reduced intolerance. It's kind of like counterintuitive but it improved glucose tolerance. So basically you are able to take it in and convert it into a storable fat. Then it reduces intolerance to eat. So basically doing the same thing. And THCV was also found to improve liver triglyceride level. It's improved liver triglyceride level.

Basically you have the good cholesterol like HDL, high density lipoprotein, your high density lipoprotein, that's your good cholesterol. The bad guy is the low-density lipoprotein, the LDL. So that is the bad guy. The LDL always. No, your bad guy is your LDL, your good guy is your HDL. High density lipoprotein. Also THCv is said to have a potential to happen in management of metabolic syndrome and metabolic syndrome syndromes like obesity and also diabetes type two diabetes.

So apart from the THCv, what other ways as cannabinoid being shown to have the potential to help with diabetes studies shows that that THC, the significantly reduced fasting blood glucose in Type two diabetes subject? And also most of these studies we have seen, they are basically from word of mouth. Some of them we are improving in studies when it comes to cannabinoid therapy bar. A lot of what we are able to walk, we call to anecdotal like word of mouth. So many can I benign use. Those are said to have lower incidence of Type two diabetes compared to non-user than clinical trials, shows that cannabis users they are more likely to have a lower BMI body mass index compared to non-user. Okay.

It's also been shown that cannabis users have been shown to be less likely to suffer from obesity deal to lower rates of metabolic syndrome. And that will make sense because obesity is one of the metabolic syndrome that we see. So basically a lot of clinical trials there needs to be done, especially in the area of CB one receptor antagonist. Look more into CBD and insulin sensitivity. And especially we really do need to dig deeper into THCv, tetrahydrocannabinol varin and see how we can harness the potential of this cannabinoid in the management of metabolic syndrome, not just for diabetes, but also for syndromes such as obesity.

And apart from that, more study definitely needs to be done in the area of CB1 receptor antagonist. Yeah, we want to lose the weight. We want to be healthy bt the same time. We want to be happy. So there's going to be a medium somewhere. And finally, for people just like we go to over the counter when we have vitamins attempt to talk about this little Alize, actually, as we grow older, we supplement our food diet with vitamins because it's not like we don't get in now via. So minerals from our food, but as we grow older. We might not get it now. So what do we do? We go and buy multivitamins over the counter.

So I feel like eventually we should be able to supplement endocannabinoid system. We have this system in our body that is not functioning as well, probably as a result of aging or whatever this situation might be. We probably going to get to a place eventually where we will be able to us half supplement that will help whatever dysregulation is going on with our endocannabinoid system.

That's our show for today. I am so glad you guys hang around till the end. Thank you so much for your support. I am just not able to do this without you. For those of you that have yet to follow me on social, I am super active on LinkedIn and my handle on LinkedIn is Dr. Lola Ohonba. That's my handle on LinkedIn. Follow me on LinkedIn and on Twitter. WCI Health on Twitter. At WCIhealth. And on Haiji. Instagram. You can find me at WCIHealth19 on IG. Come.

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