EPISODE 2: THE ABCS OF DIABETES WITH DR. SUDIPA SARKAR Transcript

Rita Kalyani: Welcome to ***Diabetes Deconstructed***, a podcast for people interested in learning more about diabetes. I'm your host, Dr. Rita Kalyani, at Johns Hopkins University School of Medicine. We developed this podcast as a companion to our Patient Guide to Diabetes website. If you want a trusted and easy to understand resource for diabetes, or to listen to previous podcasts, please visit ***Hopkins Diabetes Info dot org***. That's all one word.

On today's podcast we are excited to look at the basics of diabetes with Dr. Sudipa Sarkar, an Assistant Professor of Medicine at Johns Hopkins and the Director of the Inpatient Diabetes Management Service at Hopkins as well.

Dr. Sarkar received her MD from the Yale School of Medicine and completed her internship and residency in internal medicine at the Yale New Haven Hospital, and fellowship in Endocrinology, Diabetes and Metabolism at Vanderbilt University Medical Center. She received her Masters of Science and Clinical Investigation, also from Vanderbilt.

Dr. Sarkar has led Outpatient and Inpatient Diabetes Services at both the Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center and now serves as the Director of the Inpatient Diabetes Management Service at both locations.

Welcome, Dr. Sarkar.

SS: Thanks, Dr. Kalyani, for having me on this podcast.

RK: Dr. Sarkar, wanted to ask you a few basic questions about diabetes. Here are some of the types of questions we often get. Could you tell us what exactly is diabetes?

SS: To put it very concisely or simply, diabetes is really when a person's body cannot either make insulin or not make enough insulin and there's more to that, but that's kind of the main issue that I think of when I think of what diabetes is.

RK: And there are different types of diabetes. Type 1 and type 2. Can you tell us a little bit about what makes those types of diabetes different?

SS: People with type 1 diabetes generally cannot… they can't make insulin. So type 1 diabetes is considered what we call an autoimmune disease, where the immune system actually targets the pancreas and that's why a person with Type 1 diabetes may not be able to make insulin. Type 2 diabetes… patients with type 2 diabetes tend to have a difficult time making enough insulin for their body. In addition those patients may not be as sensitive or respond as well to insulin.

RK: We hear a lot about insulin when we talk about diabetes. Can you talk a little bit more about why insulin is such an important hormone in the body?

SS: Without insulin, glucose, which is a type of fuel that our body needs, can't enter cells so cells can't get the fuel that they need to make energy. So insulin is really important to get glucose into cells.

RK: Are there any other hormones in the body that lower blood glucose or is insulin the only one

SS: There are other hormones that work to increase insulin made by the body and those can be made by the body in response to food.

RK: Yeah it's so interesting, isn't it, that there's multiple hormones that can raise blood glucose or sugar in the body, but really only one, insulin, that can lower blood sugar levels and the reason why it's so important to managing people with diabetes.

Why is it that some people get diabetes and other people don't?

SS: There are probably a lot of factors that contribute to why someone might have diabetes and another person might not, so… Those can include things like family history, you know, having family members with diabetes. Other things can be the environment, and that can include just level of activity, food… And then other things can be age, so there are factors that are can be outside of the control of the person who has diabetes.

RK: So what are the factors that people can control? When we talk about preventing diabetes, what are the factors that someone could work on to reduce the risk?

SS: There are things that people can do to help reduce their risk of type 2 diabetes. And that includes diet and exercise. So those are kind of the pillars of diabetes prevention. A healthy diet and also regular exercise.

RK: You know it's often one of the questions we got from patients with diabetes is, is there a diabetes diet, or what really can I eat and one of the biggest struggles that often patients share that they deal with in their day to day lives. What do you tell your patients in terms of what a healthy lifestyle means?

SS: That's something that depends on the individual person. I mean for some people exercise could be limited because of other factors like joint pain or just pain that prevents them from maybe walking or running. But as tolerated I tell patients to try to walk or do another type of exercise.

If they don't do any exercise, maybe just starting off at one or two times a week and then kind of building up the same as they're able to for exercise. For diet, the American Diabetes Association doesn't recommend a specific diabetes diet. I generally tell patients kind of a balanced diet so keeping an eye on carbohydrates, because carbohydrates can raise blood glucose. And so in our clinic we generally say, you know, carbohydrates are not the enemy, but just be mindful of how carbohydrates can affect blood glucose is important for people with diabetes.

RK: Weight loss is often something that people talk about as well, having to lose weight. Why is that so important? What is the link between diabetes and obesity?

SS: Yeah, it's an excellent question. So obesity is associated with diabetes. And generally, weight loss helps the body respond better to insulin. Definitely we see in people with diabetes losing weight can help them respond better to medications and just respond to insulin better.

RK: Now we talked a lot about type 2 diabetes. I wonder if we could briefly talk about type 1 diabetes. First of all, can you tell us how common diabetes is in the United States, and perhaps around the world? What's the more common type and how many people are we seeing the United States with diabetes?

SS: So the prevalence, most recently, is about 11% so in the United States a little over 30 million Americans with diabetes, including type 1 type 2. Type 2 is more common and it's been increasing in prevalence, not only in the United States but worldwide for many years.

And that includes people with diagnosed diabetes in the United States, so of that around 30 million or a little bit more than 30 million people with diagnosed diabetes, but also includes people who don't know that they have diabetes.

RK: In type 2 diabetes, what you mentioned is the more common one, about 90 to 95% of cases, the numbers seem to rise. Is that right? What are the future projections? Is it going to continue to rise? What do you think?

SS: Yeah, it is rising in the whole world. It's become also kind of an ongoing issue in low- and middle-income countries that we're seeing that the prevalence of obesity and diabetes and other related diseases are increasing.

RK: So just shifting gears a little bit to type 1 diabetes… you mentioned that the mechanism, the physiology is a little different. Do we know what the risk factors are for type 1 diabetes?

SS: Yes, family history is a risk factor for type 1 diabetes. There's some association with geographical location. And there's bound to be some environmental factors, but those have not really been well understood as of right now.

RK: When we talk about type 1 and type 2 diabetes, it helps not only to distinguish the types just to have the diagnosis, but it impacts the treatment as well. Isn't that true? How do the treatments differ between the two types of diabetes?

SS: For type one diabetes the treatment is insulin because the underlying issue is that people have type 1 diabetes cannot make insulin. In type 2 diabetes, people with type 2 diabetes generally can make insulin but it's not as much as they need. And the second issue oftentimes with people with type 2 diabetes is not being able to respond as well to the insulin that they make, and so oftentimes for people with type 2 diabetes oral medications are an option.

RK: You know, sometimes people will come in and say they have a touch of diabetes or a borderline diabetes. What are they really talking about when they talk about that?

SS: Yeah, I mean, I think it's a spectrum, and so you know we think about people who don't have diabetes and there are people who are at risk of developing diabetes and that can be classified based on blood glucose as well as a blood test called a hemoglobin A1c, which is really a test that measures or gives us information about the average blood glucose over 3 months.

RK: Is that is this the same as pre-diabetes, what you're talking about?

SS: Yeah, and there are different forms of pre-diabetes. One way to diagnose pre-diabetes is based on fasting glucose. So fasting glucose is a certain level on 2 different tests or on the same test in 2 different occasions that can indicate prediabetes, basically telling a patient that we know that person is at risk of developing diabetes.

RK: One of the things that we often talk about, as well as prevention, is screening for diabetes. So what do you think someone who may be concerned about their own risk for diabetes? What should they do? What would you recommend?

SS: I would definitely recommend talking to the person's primary care provider and then also giving their primary care provider information about their own family history, so you know if there's someone has a mother or father or brother or sister with diabetes, it's important for that person to primary care provider to know. Also, that person's personal history, so you know does someone have a history of gestational diabetes that certainly can put a person at risk of developing diabetes in the future.

So these are kind of important things to know that history, as well as an examination of patients age and weight can all help you the primary care provider know when to screen and how often the screen for diabetes.

RK: Does everyone who develops pre-diabetes develop diabetes?

SS: No that's not the case, but it does give someone information to know that you know they're at risk of diabetes and that things can be done to help prevent that risk in the future.

SS: So that’s a great question. Not everyone with pre-diabetes develops diabetes, and actually there are things that people with pre-diabetes can do to prevent developing diabetes. Those include lifestyle intervention. So diet and exercise are important. In some people medication can be used to help prevent diabetes.

RK: What happens if someone does develop diabetes, but they don't take care of it? Why does it even matter to take care of your disease?

SS: Yes, so I think about complications, as there are short-term and long-term complications. So long-term we worry about the health of organs in the body, so the brain, the

heart, kidneys. Short-term complications can be increased urination, increased thirst, weight loss, blurry vision.

RK: In the long-term complications, how long do those usually take to develop? Over what time span are you talking about, because sometimes when you're taking care of your blood sugar, it can be really hard to link good blood sugar control with the risk of complications down the road.

SS: Yeah, these complications generally takes years to develop, so they don't occur immediately. That being said, a lot of people with type 2 diabetes probably don't get diagnosed at the time the diabetes starts, so that's important to know that in many people with type 2 diabetes they probably get diagnosed possibly years later, unless they you've been screened regularly over a period of time.

RK: And when we talk about the complications of diabetes, the eye disease, the disease, the kidney disease, the heart disease, the things that you mentioned, are those things that will happen anyways irrespective of whether the person, a person with diabetes takes care of their disease, or can they actually prevent those complications.

SS: Yeah, so we know that blood glucose control is really important to helping prevent those complications… kidney disease, the nerve disease. The risks can be greatly reduced by blood glucose control. In addition, there are other things that are really important to vessel blood vessel health and heart health and brain health and those are controlling blood pressure. Oftentimes high blood pressure can be seen in people with diabetes. And the other part of it is cholesterol. So those are all things that are kind of managed as part of a person with diabetes treatment to kind of help manage the health of the whole body.

RK: It's been really enlightening to hear about all the different ways that someone with diabetes can really reduce the risk of developing complications. You know, one of the questions that often comes up is can a person with diabetes eat sweets? Can they have desserts? What do you think?

SS: Yeah, I generally tell my own patients nothing is really off limits, but it's important to know that sweets can affect blood sugar. I think quantities important. To just keeping in mind and everything in moderation in like frequency is also important. And not all people with diabetes are the same so sweets can affect one person may be differently than another person with diabetes.

RK: And what are some of the diabetic emergencies, if you will, that, you know, a caregiver a loved one should be aware of?

SS: One important one is low blood glucose or hypoglycemia and people at risk for this are people who are on insulin or some specific oral medications that are known to cause low blood glucose. And generally we teach our patients to look out for signs like sweating, feeling irritable, maybe feeling their vision is becoming dark, tremulousness. And if that happens, if they're able to check their blood glucose right then, that's great. If not, they should just treat that,

those symptoms as a low blood glucose and we recommend drinking a half cup of juice or regular soda so about 15 grams of carbohydrates, or taking 4 glucose tablets and then repeating blood glucose check in about 15 minutes.

RK: That's really great information, especially to know if you see someone or know someone with diabetes and they have an emergency - low blood glucose - on how to support or assist them. What other resources might be available for patients with diabetes? We have our Patient Website for diabetes and that's a great resource, but about organizations or other resources you might suggest that someone with diabetes or a family member with diabetes might seek out?

SS: One resource is the American Diabetes Association website has a lot of great facts and also a lot of great advice on foods like diabetes friendly foods that people with diabetes can enjoy. The American Heart Association is also another great resource, because so many people with diabetes are also at risk for heart disease, so that one also can be helpful for people with diabetes.

RK: Another question that we often get is, if I have diabetes does it mean I'm going to lose my foot? How would you respond?

SS: People with diabetes are at risk for decreased nerve sensation in their feet. Over time, in people with diabetes who may not have blood glucose at goal, one complication that we work out for is decreased sensation in the feet, so that can put a person at risk for injuries in their feet, foot wounds or ulcers that could result in complications, such as amputation, but generally to avoid that we recommend that patients look at the bottom of their feet, every day, or if they're unable to, to ask a family member friend. At patient visits for diabetes clinic we do for exams regularly. So those are kind of measures that we take to help avoid loss of the person's foot.

RK: Do you recommend that people with diabetes inspect their own feet at home?

SS: Yes, absolutely.

RK: Yeah, I think that there are many things that can be done at the home that seem simple but really can lead to important prevention of complications in the future and it's really important to hear about that information. That's really great to hear about.

You know, Dr. Sarkar, another question that we often get or something that can often be very frustrating for patients is sometimes that the medical language that's used during the healthcare visit you know can sometimes be confusing to understand just exactly what your health care provider is trying to tell you. What advice do you have for patients that that find that a challenge?

SS: Yeah, I think in diabetes treatment it’s so important for patients to be informed and aware, and so anytime any word or term is used that a patient is not sure what it means, I think it's important to always ask the provider. If it's possible to bring a family member or friend to help advocate, that's always great too, but you know, I think it's important for this to be kind of a team partnership to help treat diabetes between the provider and the patient. So it's important for

someone with diabetes to feel comfortable with the words that are being used, and if they don't understand it just to ask.

RK: Are there any resources that could help with patients who are trying to understand these medical terms?

SS: So our website has a glossary which helps explain the terms in language that hopefully doesn't include any jargon or complicate terms.

RK: Dr. Sarkar, thank you so much for your time today and for your great expert input. We are really thrilled to hear about some of the latest and greatest information on diabetes and really, thank you for your time/ So thanks so much for joining us today.

SS: Great. Thank you.

RK: I'm Dr. Rita Kalyani, and you've been listening to ***Diabetes Deconstructed***. We developed this podcast as a companion to our ***Patient Guide to Diabetes*** website. Our vision is to provide a trusted and reliable resource, based on the latest evidence, that people affected by diabetes can use to live healthier lives. For more information, visit ***Hopkins diabetes info dot org***.

We love to hear from our listeners. The email address to reach us is ***Hopkins Diabetes Info at JHMI dot edu***. Thank you for listening. Be well, and see you next time.