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### **Heart Failure, Chronic Kidney Disease, and Type 2 Diabetes**

Katherine Tuttle: Well, hello everyone and thank you for joining this podcast on the prevalence of heart failure, chronic kidney disease. We'll also call it CKD and type 2 diabetes and the impact that these conditions have on patient outcomes. We'll also discuss management options to mitigate these risks and review current guidelines and diagnostic practices.

[00:00:24] This podcast is a continuation of our series to reduce cardiovascular deaths, heart attacks, heart failure, kidney disease, and strokes, in people living with type 2 diabetes and is based on the collaborative initiative between the American Heart Association and the American Diabetes Association Know Diabetes by Heart™. This series is brought to you by founding sponsor Novo Nordisk.

[00:00:56] I'm Dr. Katherine Tuttle. I'm a professor of medicine at the University of Washington, and I'm also Director of Research at the Providence Inland Northwest Health System. I'm a nephrologist and an endocrinologist, and I've had a longstanding interest in diabetes and kidney disease and its multiple manifestations including cardiovascular complications. I'm joined today by two other distinguished experts. First I'll go to Dr. Josh Neumiller, who will introduce himself.

Josh Neumiller: Well, thank you, Kathy. Really privileged to be here with you and Tony to discuss this today. But yeah, my name's Josh Neumiller. I'm a clinical pharmacist and diabetes care and education specialist. I'm a professor of pharmacotherapy at Washington State University in Spokane and have the privilege of working with Dr. Tuttle at Providence on some of our ongoing research projects as well and do a fair amount with the American Diabetes Association. I've been involved in some guideline development, and this has certainly been a huge topic and where we've seen a lot of shifts in guidelines and implementation. So, excited to chat with you about this today. Thank you.

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Katherine Tuttle: Thanks, Josh. And we also have joining us, Dr. Tony Good. Tony, would you like to introduce yourself?

Anthony Good: Absolutely. Thanks, Kathy. My name is Tony Good. I am an Associate Professor at St. Francis University in Loretto, Pennsylvania, and the program director of the Family Nurse Practitioner Program, as well as a nurse practitioner practicing in a private nephrology practice. And I am also engaged with the American Diabetes Association and have been with the Membership Advisory Group as well as the cardiovascular group in terms of its manifestations in kidney disease. So very excited to be here with both you and Josh today.

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Katherine Tuttle: Well, thanks Tony. Let's go to our first topic. The first one is the intersections of obesity, type 2 diabetes, CKD, and heart failure. These are common and deadly. Tony, do you want to give your perspective?

Anthony Good: Yeah, absolutely. So, taking a look at the CKM or cardiovascular-kidney-metabolic involving obesity, type 2 diabetes, CKD, heart failure and what that does in terms of the syndrome, taking a look at the risk factors and making sure that we're having conversations with our patients. What are their early warning signs? What are the implications for a patient that starts out as obese or with type 2 diabetes or starts out with underlying chronic kidney disease and/or heart failure and ends up having one or more of those conditions and progressing slowly and how that continues to cause that deadly progression that you mentioned as that hypertension increases, as the insulin needs increase in terms of their diabetes care, looking at the warning signs and how we're educating patients about managing those warning signs and bringing those to our attention and as providers, making sure that we are paying attention to those warning signs and employing appropriate interventions to improve outcomes.

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Katherine Tuttle: Thanks, Tony. Josh, what about you?

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Josh Neumiller: Thank you. I think this is huge. And as a diabetes educator and someone that has worked with people with diabetes for a long time, I think this is really an amazing time where we're seeing this discussion be more holistic of not only people with diabetes and people with cardiovascular disease and people with kidney disease, but really understanding that these conditions are so tightly interlinked. And we really need to manage these on a team basis that I used to go out and really be talking and focusing on people's glycemic management, but it's really looking at the big picture. What I really like about the recent AHA Presidential Advisory on CKM health is really posing this as a team-based issue where we need to involve everybody on the care team. And really, what I also like is that it really focuses on that weight management aspect as something we can target very early to help slow progression and worsening of outcomes for these people.

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Katherine Tuttle: Thanks, Josh. And with regard to CKM syndrome, we really conceptualize this as a condition that's caused by dysfunctional adiposity that then leads to multiple complications that march forward in tandem. And I think what you've all said is

[00:05:28] that we need to look at patients much more holistically so that they come in with clustering of risk factors and complications. So, with that in mind, this is a syndrome that really typifies high risk patients with multiple comorbidities that have common underlying mechanisms. As we think about a new paradigm, as you've described, Josh, that we're thinking across multiple comorbidities and risks, how does that influence the way we should be approaching patient care, and not only diagnosis, but interventions?

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Josh Neumiller:

Oh, thank you, Kathy. I think it's a really important question and certainly something addressed in terms of needed steps and things we need to work through on a health systems level as to really how to manage these individuals as a team, really thinking about this as a team-based sport. And what I really like, again, with what the AHA Presidential Advisory has stated is it is really defining this CKM syndrome. As I was reading it, what I especially liked was that they provided a very firm definition on CKM, but also provided kind of a lay definition that we can communicate to our people living with these conditions, that CKM syndrome is a health disorder due to connection among heart disease, kidney disease, diabetes, and obesity, leading to poor health outcomes.

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And I think that's really what stuck with me, is viewing this as something we need to not just manage these in the siloed fragmented care approach, but really looking at bringing everybody together, looking at care coordination, using health navigators, really understanding that the majority of these individuals are managed in primary care, but giving those primary care providers the tools and information to make appropriate referrals to specialty care and engaging other members of the healthcare team, pharmacists, nurses, dieticians, social workers.

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The guidance speaks a lot to social determinants of health and really looking at the context under which these individuals live. And certainly, as we start to talk about some of the newer therapies and interventions that can improve outcomes in these folks, we know they're largely underutilized and there are barriers to access affordability. And so really bringing the whole team together to make sure people are getting the best care possible such that we can improve outcomes.

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Katherine Tuttle:

Thanks, Josh. Tony, in your role as a nurse practitioner, I mean, you exemplify team care in your profession very, very well. And you also have a foot both in overseeing a family nurse practitioner training program, but also working in specialty care. So, I think you're uniquely qualified to perhaps give us some perspectives on how we do form these teams and collaborations not only between specialties, but with primary care and across providers that work in these different settings.

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Yeah, thank you, Kathy. Yeah, I think that we have been doing a very good job of making sure that we're engaging the dietician, we're engaging social work in this

Anthony Good: whole care model. We're keeping the pharmacist, the physician, the nurse, the nurse practitioner, the family, the patient so that these decisions and these recommendations aren't being made unilaterally, but everyone together is making a recommendation and trying to help the patient get to that point by providing them with the appropriate education as well as giving them the tools to be successful. Because as we all know, losing weight isn't easy. It's frustrating. And if you don't have the support of your team to continue going much like any other thing that we have to manage, it's very difficult to say, for example, quit smoking if you don't have the support of your team or eliminate your alcohol consumption.

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I feel like even the new Standards of Care in Diabetes for 2024 have done a much better job of being more inclusive and taking a look at how we can take that team approach and better define what those things are, not just for a lay person's explanation, but for all of us so that we all know that we have a place at the table and we all have an equal place at the table because not any one of us has more influence over the outcome than another member of the team.

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Katherine Tuttle: So Tony, building on that theme, we now have a number of treatment strategies too, from of course healthy lifestyle, physical activity, weight management, smoking cessation in people who smoke as well as, if you will, a plethora of new drugs and some pretty complicated treatment paradigms, frankly. And so, as we build multidisciplinary teams to deliver this care, could you give us your perspective on how we define roles and responsibilities as well as work together toward these common goals?

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Anthony Good: Yeah, I think sometimes the roles get kind of muddy and we have to remember that the patient's best interest is at heart and that we need to not be territorial in our decision-making as a member of the team and being open to listening to other perspectives and the other specialties around the table that are really here in the best interest of the patient in the representation of their specialty or subspecialty.

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So, I think we have to, number one, take a look at the socioeconomic factors that play into whether or not the patient can actually do something. We can develop this amazing plan of care as a team and the patient's not going to follow it because they can't afford it. And what measures do we have in place? I mean, thankfully when we have a patient with kidney disease, we have the American Kidney Foundation that can also provide some financial support to help offset some of that.

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But outside of that, when you're on a fixed income and these new meds are pretty expensive and their representatives are telling us that it's easy to get them authorized and it's going to be cheaper, but how we keep the patients also dealing with the side effects of these medications, especially initially as they're transitioning into them and that we're supporting them so that they don't discontinue that therapy and they don't feel like they're left alone like this isn't a onetime thing, like we're having a meeting right now and there are 12 of us

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[00:12:20] around the table having this conversation supporting you, and then we disappear. But rather we're always here, they're going to come in to see their physician, they may come in and see the pharmacist, they may see them both collectively, it may be a tele-visit, just all the pieces that we can pull together to try to bring all these agents to the patient and really reduce their risk factors and improve outcomes.

Katherine Tuttle: Well, I think you've touched on a number of important points, and one of them in particular is the complexity of the medications and medication management. Here, there's clearly a role for the pharmacist, particularly with helping to monitor and adjust medications. So, I'd like to hear Josh's perspective on that, particularly in his expertise from a pharmacy standpoint.

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Josh Neumiller: Oh, thank you, Kathy. I appreciate that. And certainly, as a clinical pharmacist, I may have a little bias, but I definitely do think pharmacists can play a big role as a member of the team. A lot of it of course comes down to reimbursement in some of these issues that I think we need to work through as really adding pharmacists to the care team. But I think Tony, as you said, hit on a lot of great points, and that's continuity of care, continued communication with the person we're managing. And I think pharmacists are well suited to be able to have the time to provide that education, encourage follow up with labs and other issues that may come up.

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[00:13:52] And as a pharmacist and I happen to, on occasion, go out and see people in their homes, really looking at where people live can be very eye-opening. I often think the biggest impact I make for people beyond education is serving as that hub to really get all members of the team together so we're all on a level understanding. Sometimes I look at medication lists from different providers, and they don't always match, and certainly EHRs (electronic health records) have helped with that. But really just bringing the team together, making sure we all have common goals and priorities and really making sure we understand preferences of the person with CKM syndrome as well.

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Katherine Tuttle: And Josh, what about the role of the pharmacist in helping with say, pre-authorizations, medication assistance programs? Tony really touched on the cost issues, which we're all challenged by. Of course, we were hoping for some improvement there. But in the meantime, what can pharmacists do to support patients with accessing some of these expensive treatments?

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Josh Neumiller: No, thank you. And I forgot to mention that on the last response, but a very important aspect is really helping them understand what are available, whether that be patient assistance programs, discount programs. Going through certain pharmacies potentially might have different costs associated with that. And there are a lot of different resources that are available, but they take time. Sometimes the individual being treated has to be involved in that decision-making process. Sometimes we have to submit information about income and other things. That does take some time to gather. And I think pharmacists are

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really well suited, whether that be in the clinical ambulatory setting or even at the community pharmacy can help navigate some of those issues.

[00:16:22] Unfortunately, on occasion, I run into those individuals that simply just couldn't afford their medication, didn't fill it, and didn't communicate that back to the healthcare team. So, I think again, having those open lines of communication and appropriate follow-up and then taking that next step to look at resources that are available to help with access and affordability is really critical to close some of the current gaps we see in utilization of these therapies for people with kidney disease, diabetes, and otherwise.

Katherine Tuttle: Well, and there's such an issue with polypharmacy too. We're now prescribing multiple medicines for overlapping indications, but also many of the people with CKM syndrome have other conditions too. So, I think that polypharmacy is something where the pharmacist can be extremely helpful in terms of drug interactions, dose adjustments especially for low kidney function. And maybe even de-prescribing, right? Some things that people really don't need just add to complexity costs and side effects.

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[00:17:19] So, we've been talking a lot about medication in general, but not specifically. I think the audience might like to hear from both of you particularly about the new approach to cardiovascular and kidney disease risk reduction with agents that were originally developed for glucose lowering, but now we know they're organ protective and we want to give them irrespective of the need for glycemia. Yet that is something that healthcare professionals from primary care to specialists are really having trouble getting their heads around. So again, Tony, I'm going to pitch this one to you. How do you communicate this concept to your colleagues and overcome this sort of fear of giving glucose lowering agents for a non-glycemic indication?

[00:17:49] Anthony Good: Well, thank you, Kathy. I think that one of the most important ways to try and approach it is to educate them in a non-threatening matter so that they don't feel like you are attacking them and questioning their ability to provide high quality patient care. But spending some time, especially in my role talking about the kidney component of it and what it does in terms of providing additional protection as well as the reduction of hospitalizations and heart disease, ultimately the reduction in mortality if we can implement some of these agents.

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[00:18:50] I again go back to unfortunately the cost that can be prohibitive in some of these cases, but I do think that, as you said, people are afraid to write for too many of these agents and have too many things on board when the intention is well known that the study went through the FDA for glycemic control, especially when we have a non-diabetic patient.

I'll also say that I think some of the resistance from the insurance carriers have been covering something that is intended for glycemic control and to allow patients to have access to those agents. I guess the third thing I would say, which

[00:19:22] tends to be a bit of an issue as well, is access to those agents. These seem to be hot items right now for those that are prescribing them and patients that are educated enough are wanting to get on those agents and lose weight and reduce their body mass index, get that weight circumference down, reduce their cardiac risk factor. So, I think we've got great options in our deck of cards right now and we just need to continue to really educate our colleagues on appropriate usage and the fact that these are not being inappropriately prescribed for protection of CKM.

Katherine Tuttle: Well, and I think you've alluded to the GLP-1 receptor agonists in particular with the weight loss. The other thing too that I observe very commonly among cardiologists and nephrologists particularly is the resistance or hesitation to prescribe an injectable therapy. For some reason, there seems to be a mental block about that. And then with regard to the SGLT2 inhibitors, people really fear the side effects whether it's potential for ketoacidosis or genital mycotic infections. And even in people with CKD, these agents have very little glucose lowering capacity. There's still a fear of inducing hypoglycemia and the complexities of antiaging it. That said, of course, the GLP-1 receptor agonists retain glycemic efficacy even in end-stage kidney disease, and there's probably a much larger risk of hypoglycemia with those agents. So even among informed clinicians, they still are hesitating because of the fear of side effects and a certain discomfort in managing those kind of patients, especially from a nephrology or cardiology perspective.

[00:21:20] So, I'm going to pitch this one back to Josh who's an expert in medication management, and again, bring in the potential role of the pharmacist to really help clinicians safely prescribe and maybe talk a little bit about risk mitigation for both the SGLT2 inhibitors and GLP-1 receptor agonist classes.

Josh Neumiller: Well, thank you very much, Kathy. I think a lot of excellent points brought up by you and Tony on this issue. I see similar things. I think one of the, particularly in primary care, what I fight a little bit against is that notion that for years we told people not to use SGLT2 inhibitors as kidney function decline because they didn't lower A1C as much, and now we're kind shifting the story. And so, I feel like it's still kind of combating that message that was ingrained for a period of time that that's really not why we're adding these on in many of our people with kidney disease.

[00:22:21] And the other thing I try to catch myself, and I still do it on occasion, but is not to call SGLT2 inhibitors and GLP-1 receptors diabetes meds or glucose lowering meds and really try to frame them as cardiometabolic agents because we know we're using these in heart failure and people with non-diabetic CKD, so really trying to reframe that discussion.

[00:22:51] But to your point, I think risk mitigation is important. I also see some hesitancy in using these medications because of some of the side effects that have come about. I'm still also kind of counter detailing the thought that everybody started on SGLT2 inhibitors going to have an amputation down the line.

Josh Neumiller: There's still fear about that as well, and certainly the DKA (diabetic ketoacidosis) issue. But really providers and people started on these medications not understating the risks associated with their use, but really giving them the tools and understanding of what those risks are and how to minimize them, I think is critical. And so GLP-1 receptor agonists and our dual incretin agent Tirzepatide, making sure we're starting at a low dose, titrating it slowly, giving people sick day rules and giving them some tools about what to do if they do have nausea and vomiting just to make sure we don't cause any issues there.

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[00:23:48] SGLT2 inhibitors. Talking to people about hygiene, that can go a long way in preventing some of these genital mycotic infections. Keeping the genital areas clean and dry, clean undergarments, we know that can be very helpful. And really making sure people understand that if they do run into issues, talking to their pharmacist or their prescriber to really work through that, because that doesn't mean they need to stop the medication necessarily. And I know, Kathy,

[00:24:15] you've been involved in a lot of guidelines and work to really look at paradigms to increase utilization of these therapies. I guess, are there any things that really stand out to you as key things people should be thinking about with these medications?

Katherine Tuttle: Well, I think both you and Tony have touched on important points. I think education is critical across health professions. Again, as we signify, different healthcare professionals are going to be involved with these patients. We need to have multi-specialty multidisciplinary education so we're singing the same song together. We might have a little different tune, but at the end of the day, we want to be giving the same message to our colleagues and to patients.

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[00:25:16] And then I think there's a real need for implementation and new methods of delivering the care and coordinating care across specialties because in most healthcare systems, it's actually quite fragmented. There are a number of approaches that have been proposed. One that we're particularly interested in is a pharmacy-based medication management program that supports primary care providers in prescribing and monitoring appropriate therapies for CKM with support by the specialty teams, for example, who will do team conferences on a regular basis, weekly or biweekly, to review cases with the pharmacist and the primary care professional. I think this is important, one, because not only do we lack primary care professionals, but there's also a serious access problem to specialists, especially nephrologists who are quite in short supply, particularly in many areas of the country. So, this may provide a way to streamline referrals to people who really need specialty care and support the primary care professionals in providing care in that setting when possible.

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[00:26:21] At this point, I think it's probably good to wrap up with maybe just a few concluding remarks. We've covered a lot in terms of the syndrome, the multidisciplinary/multi-specialty approach, medication management, particularly challenging, and really the central tenet of a team ethos that we're all working together and there're an enormous number of patients. So, there is really a



[00:26:50] necessity for team-based care, and I think that's come through very well. I'll give you each a chance to provide any other concluding remarks before we close. Tony, you want to go first?

Anthony Good: Certainly. Thank you, Kathy. No, I think everything's been covered really well here today. I mean, I think we really touched on those risk factors and modifiable risk factors that we can help patients to try and tackle as an interdisciplinary team in addition to pharmacotherapy. So, thank you. It's been a pleasure. Josh?

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Josh Neumiller: Well, thank you. Been great chatting with both of you about this, and I think we covered a lot of ground. And I would just say I want to thank certainly AHA and ADA for coming together because I think that really speaks to the importance of really bringing several organizations and disciplines together such that we're all working together as a team. And so, thank you both.

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Katherine Tuttle: Well, and my thanks to all of you and all of you who are listening and doing your best every day. We are grateful for the care that you've provided to these patients. This will now conclude our podcast. We do want to hear from you. So, if you have suggestions for future content, please email [knowdiabetesbyheart@diabetes.org](mailto:knowdiabetesbyheart@diabetes.org). It's our mission to reach as many listeners as possible with this lifesaving information. And if you enjoyed this podcast or are listening to it on iTunes or Google Play, don't forget to give us a rating and subscribe. So, thank you very much for listening and have a wonderful day.

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