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## What You Should Know About Managing Your Patients with Both CKD and Hyperkalemia

### Announcer:

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### Dr. Kelepouris:

Hyperkalemia is common in patients with chronic kidney disease [CKD], especially when the condition is more advanced and complicated by chronic heart failure. When following guideline-directed medical treatment, dosing and monitoring these patients becomes a challenge and requires a multidisciplinary approach to improve outcomes. Today we'll be reviewing a patient with advanced CKD and chronic heart failure who is at high risk for hyperkalemia, and we'll also discuss treatment options to overcome these challenges in this very vulnerable patient population.

This is CME on ReachMD, and I'm Dr. Ellie Kelepouris. I'm a clinical professor of medicine and a nephrologist at the University of Pennsylvania School of Medicine in Philadelphia. And along with me today is Dr. Stephen Greene. Welcome, Stephen.

### Dr. Greene:

Thanks so much, Ellie, look forward to the conversation.

### Dr. Kelepouris:

Great to be with you, Stephen. So let's introduce these topics through a patient case. So do you want to review a patient case for us?

### Dr. Greene:

I'm happy to. And you know, this is common for me to see many patients that are referred to my care as a heart failure cardiologist that are actually not on optimal guideline-directed medical therapy with RAASI [renin-angiotensin-aldosterone system inhibitor] inhibitors or MRA [mineralocorticoid receptor antagonist] therapy, due to prior documented intolerance, quote/unquote, due to hyperkalemia or even reported as an allergy to these medicines due to hyperkalemia.

Oftentimes, it's patients with low GFR [glomerular filtration rate] or some element of chronic kidney disease. And it's really up to me to talk to these patients about what the context of their prior hyperkalemic episode was like and also to try to think about ways to get these patients on optimal medical therapy.

You know, in 2023, we fortunately have now so many tools in our tool kit for getting these patients with prior hyperkalemic episodes, even those with chronic CKD on quadruple medical therapy for heart failure with reduced EF [ejection fraction], for example.

### Dr. Kelepouris:

What was your approach to managing hyperkalemia in this patient? What would your first goal be or your first approach therapeutically?

### Dr. Greene:

Well, I think the first priority for me is, let's talk about a heart failure with reduced ejection fraction patient. So for that patient population, we have our 4 pillars of medical therapy. They're really front and center, all proven to reduce risk of mortality, hospitalization, improve

quality of life. So my goal as a heart failure cardiologist is to figure out any which way to get patients on all 4 of those pillars: beta-blocker, RAAS inhibitor, MRA, and SGLT2 [Sodium-glucose cotransporter-2] inhibitor. So I try to keep it simple when I'm seeing a patient for the first time. And you know, I look at what therapies of those 4 they're already on, what therapies they're missing. And if they are missing like RAAS inhibitor or an MRA, for example, due to hyperkalemia in the past, maybe that's documented well, maybe it's documented not so well, the first thing I think about is, well hey, let's start an SGLT2 inhibitor.

I also will think about potentially starting the SGLT2 inhibitor and starting the MRA at the same time because they kind of work in concert together: one's trying to potentially drive potassium up; one's protecting against high potassium. But the bottom line is these people need to be closely monitored after you're starting MRA therapy, a RAAS inhibitor for the potassium issues.

**Dr. Kelepouris:**

So how do you communicate with your nephrology colleagues? So we may have a different first approach. Patients with advanced CKD and GFRs of less than 20 or so, really are not eligible to receive an SGLT2 inhibitor. So our first pillar is always, because we have clinical trial evidence to support renal protection and preservation, start with a RAAS inhibitor.

And we also believe that the potassium binders really offer a great opportunity to keep patients on these treatment modalities while keeping their potassiums in a normal range. We know that the biggest barrier to use of guideline-directed medical therapy is hyperkalemia or at least the thought that someone with advanced chronic kidney disease will become hyperkalemic and, therefore, we will have to stop this life-saving medication. So the binders have really been life-saving agents for us in nephrology.

**Dr. Greene:**

No, that's great to hear, Ellie. And I think what you said, you said one thing that, really, I totally agreed with for sure, was that it's not even the hyperkalemia itself. It's this fear of hyperkalemia among clinicians in terms of it, you know, changing our practice or having us shy away from starting guideline-directed medical therapy. So I think it's comforting to know that we can be more aggressive in following the guidelines because we now have a tool in our back pocket that, if we run into trouble with potassium, is very effective in controlling those levels.

**Dr. Kelepouris:**

I couldn't agree with you more, and, you know, just to address this issue, I know you and I have been involved in a large international registry, the CARE-HK registry, which enrolls patients just like the one that you described, Stephen. What can you tell us about this registry, and how does it apply to managing these challenging patients?

**Dr. Greene:**

It's been terrific working with you and so many others across the globe on the CARE-HK in heart failure registry. You know, and as you alluded to, Ellie, this is really the first heart failure registry specifically designed to study patients at high risk for hyperkalemia. It's an international registry across 8 countries in Europe and the United States. It's including patients with heart failure across the spectrum of ejection fraction. The inclusion criteria are very broad and pragmatic, but really to get at that high-risk-for-hyperkalemia patient population, all patients are on a RAAS inhibitor, all patients are required to be eligible for or already on an MRA. And then specifically, all patients are required to be at high risk for hyperkalemia. And that can include being actively hyperkalemic at time of enrollment, a history of hyperkalemia, or an eGFR [estimated GFR] less than 45.

And really, the goal of this registry is really to try to figure out what are the true treatment patterns that we have within routine clinical practice for taking care of this high-risk heart failure subset at high risk for hyperkalemia? And also to understand how are potassium binders being used in real-world practice? And how effective are they in a comparative effectiveness-type study for actually preventing and treating these hyperkalemic episodes? So it's a registry, again, embedded within routine clinical care. I think it's going to give us a lot of real-world insights on just where we are in studying a patient population, understanding the patient population that historically has not been well represented, as you mentioned, in a lot of our other heart failure registries or clinical trials.

**Dr. Kelepouris:**

The CKD breakdown of patients in this registry is really very important to point out: 58% of patients had chronic kidney disease. And it's important to also mention that almost 45% of those patients have predisposing factors such as diabetes and type 4 renal tubular acidosis, which makes it difficult for them to excrete potassium. So those patients are really at high risk for hyperkalemia and are more challenging to manage. So dosing and monitoring patterns for these patients with recurrent hyperkalemia and CKD from real-world perspective is really very important to add this to our clinical armamentarium.

For those just tuning in, you're listening to CME on ReachMD. I'm Dr. Ellie Kelepouris. And here with me today is Dr. Stephen Greene. We're discussing recent data from the CARE-HK registry, and how it can be applied to our patients with both chronic kidney disease and heart failure.

What are the misconceptions, then, that you have seen of patients with chronic kidney disease and heart failure at risk for hyperkalemia?

**Dr. Greene:**

So I think the misconception that I think we're trying to battle these days is that in 2023, we have so many different tools in our tool kit that work together to get patients on, you know, best possible life-saving therapy for heart failure. So sure, there are going to be some patients who can't tolerate these therapies for a variety of reasons, including some maybe with truly, truly refractory hyperkalemia. But that patient population where hyperkalemia is really getting in the way of guideline-directed medical therapy, I think that's shrinking, and I think we need to embrace that and be aware of that as the medical therapy and the potassium binder generation now is really taking flight.

**Dr. Kelepouris:**

I think that's a very pragmatic and thoughtful approach. And I think this registry really will point out more opportunity for us to stay on guideline-directed medical therapy and have potassium control with potassium binders.

So let's put this into context for our audience and refer back to your patient case. How do you identify a patient with chronic kidney disease and heart failure at high risk for hyperkalemia? And when do you open a dialogue with a nephrologist to coordinate care, Stephen? I'm very interested in hearing about your approach.

**Dr. Greene:**

So you know, the bottom line is we see patients, as a heart failure cardiologist, with chronic kidney disease all the time. I mean, there's data to suggest that the majority of our patients, especially those discharged from the hospital, have an eGFR less than 60. So I see CKD everywhere I look.

You know, I truly believe getting the nephrologist involved early in these patients is helpful. And also, open lines of communication, especially with electronic health record now, we have ways to kind of send messages easier than ever before. But at the same time, the thing I think is very, very important whenever you have multidisciplinary care in these complex patients, is we need to feel – each person as part of that team needs to feel empowered to make the evidence-based medication decisions. We both, for example, need to feel empowered to start those type of therapies, to start our RAAS inhibitors, and also to start our potassium binders when needed.

**Dr. Kelepouris:**

Well, I think it's really important. What you said resonates with me completely. I think that we all should be empowered to make the changes that we feel are in the best interests of the patients, particularly when they're evidence based.

So, Stephen, I'm really glad to hear that you agree, and we agree, that maintaining a multidisciplinary dialogue to manage hyperkalemia is really important. And the importance of identifying high-risk patients early and identifying what would influence your use for a potassium binder are really very important.

And you said something very important that resonated with me that I would like to review with you. And that is patients may be hyperkalemic and have 1 hyperkalemic episode. And when physicians see that in their record, they really are very reluctant to put them on an agent that perhaps might elevate their serum potassium, like a RAAS blocker or an MRA. How do you address those fears that these physicians have? And what would influence you to use a potassium binder and make sure that they understand how important it is to use it while maintaining the RAAS blockade and the SGLT2 inhibitors and the MRAs, of course?

**Dr. Greene:**

Education is, to me, is the first and foremost. And I think, you know, that's the clinicians need to be aware that potassium binders exist and are available and how effective they are from reducing serum potassium levels. And also patients need to be aware that these therapies exist. And they also need to be aware of the importance of staying on their guideline-directed medical therapy and the risks of omission when we, you know, potentially have a very low threshold to just throw therapies like MRA and RAAS inhibitors away because we're worried about hyperkalemia. Even if it didn't even happen, or if it did happen, we're still, you know, holding these therapies back.

So we need to keep patients' safety number one, but again, the safest situation is to be on a RAAS inhibitor, MRA, with a normal potassium level. And now we have a safe situation where we can add these potassium binders to those other therapies and achieve that goal.

**Dr. Kelepouris:**

Well, Stephen, this has really been a fascinating conversation. But before we wrap up, can you share your one take-home message with our audience today?

**Dr. Greene:**

No, happy to, Ellie. And I think my one takeaway message would be that now in 2023, we have so many tools in our tool kit to combat hyperkalemia, including the potassium binders. So really, we're at a place now, where, I think, assuming costs and access to medications is not the issue, we're really at a place now where hyperkalemia really shouldn't be a barrier to the vast majority of our patients achieving guideline-directed medical therapy.

**Dr. Kelepouris:**

Stephen, I couldn't agree with you more. And from a nephrology perspective, we really are at a threshold for using innovative therapies, including SGLT2 inhibitors and MRAs, to prevent progression of chronic kidney disease and also concurrently improve mortality in patients with CKD and heart failure. And I really believe that we should empower ourselves and our colleagues to use these treatments without fear of hyperkalemia, because we do have, as you said, in our tool kit, the use of potassium binders, which will enable us to continue patients on guideline-directed medical therapy which can save their lives, particularly in heart failure and advanced CKD.

That's all the time we have today, so I want to thank our audience for listening and thank you, Dr. Stephen Greene, for joining me and for sharing all of your valuable insights. It was great speaking with you today.

**Dr. Greene:**

Thanks so much, Ellie. Great speaking with you.

**Announcer:**

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