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Improving CKD Awareness: Emphasizing the Risk in Patients Who Are Unaware

Ashley Baker:

According to an article published in the *American Journal of Kidney Diseases*, titled “CKD Awareness Among US Adults by Future Risk of Kidney Failure,” patients with chronic kidney disease, or CKD, might be unaware that they have this disease. So how can we improve CKD awareness?

Welcome to *Clinician’s Roundtable* on ReachMD. I’m your host, Psychiatric Nurse Practitioner Ashley Baker. And today, I’m speaking with Dr. Chi D. Chu, who coauthored that article and is also an Assistant Professor of Medicine in the Division of Nephrology at the University of California San Francisco.

Dr. Chu, thanks for joining us today.

Dr. Chu:

Thank you for having me.

Ashley Baker:

Let’s dive into some background, Dr. Chu. Can you explain the prevalence of CKD in patients who may be unaware of the risks?

Dr. Chu:

So overall, the prevalence of CKD in the US population estimates range about 13 percent give or take, and in our research, we found that many of these patients who have CKD are unaware of the fact that they have kidney disease.

Many people who have kidney disease, according to the diagnostic criteria, either reduced glomerular filtration rate—that’s reduced GFR—or albuminuria, which is the other diagnostic criteria that can be considered chronic kidney disease—so many people who have CKD by these diagnostic criteria are not aware that they have any sort of kidney disease, whether it’s that their doctors never tested them or diagnosed them, or they have had the tests but they were not recognized by their clinician as having CKD, or their doctors told them that they had CKD but in a manner that didn’t register with the patients that this was kidney disease.

There are a lot of different terms when people talk about kidney disease, and if it’s not conveyed in a consistent manner, then patients may not recognize that they indeed have some form of kidney disease.

Ashley Baker:

And which patients with CKD are then at the highest risk for progression to kidney failure? And is that a term that resonates more with patients over hearing CKD?

Dr. Chu:

Yeah, definitely. So the patients with the highest risk of progression to kidney failure are patients who have a lower GFR or who have higher, more severe albuminuria or proteinuria, so protein in the urine, albumin in the urine. Those are the two probably most recognizable risk factors for high risk of progression to kidney failure. There’s actually clinical calculators or equations that people can use to get an estimate of the risk of kidney failure. So these are things like the Kidney Failure Risk Equation, which is available online, and people can enter in the age, sex, GFR, and albuminuria lab measures, and it can produce an estimate of a person’s risk of progressing to kidney failure.

Ashley Baker:

That makes sense. So taking a look at your article, Dr. Chu, why was the study so important to conduct? And can you tell us a little bit

about the patient population that you used?

Dr. Chu:

So this is a study that—it's really a follow-up of some earlier work from our group looking at awareness of kidney disease—and this is using a study population, called the NHANES study, so that's the National Health and Nutrition Examination Survey. So we have NHANES data going back at this point over 20 years of its continuous occurrence, and that gives us a nationally representative sample of people who have extensive laboratory testing and questionnaires, like health-related questionnaires as a part of this survey. And so that let's us look at things like who has kidney disease, how many people have kidney disease in a way that we can extrapolate to the US population. It also includes questions about, "Have you ever been told that you have weak or failing kidneys?" Is the way the question is worded. But that gives us a sense of whether people have been told that they have any kind of kidney disease, so that lets us see who has kidney disease and how they answered that question.

And in our previous study that I alluded to, we found that kidney disease awareness was very low. So most people who had kidney disease based on the lab tests answered "No" to the question of if they have ever been told that they had weak or failing kidneys. And the study that we're referencing now is just a follow-up of that to look at the surveys in the subsequent years, partly to see has anything improved or changed in the interim, and also to look at it by the risk of kidney failure. So instead of looking at CKD stage, which is the way that CKD is traditionally broken down, we wanted to look at it by the person's risk of kidney failure, so the person's risk of having a kidney-specific complication, so the end-stage complication of CKD.

The reason for that is because when you break CKD down by stage, that just goes by their GFR. So if your GFR is from 15 to 29, that's stage 4; if it's from 30 to 45, 44, that's stage 3b, etc. But looking at only the GFR does not give you a complete picture of the person's risk of having the most feared complication of kidney disease, which is being on dialysis and kidney failure. So even within a stage, so even within looking at only people who have, for example, CKD stage 4, there's a huge variability in the risk of progressing to kidney failure. Some people are very high risk and will develop kidney failure within a few years. Other people may stay in CKD stage 4 for many years, for the rest of their life.

Ashley Baker:

Can you touch on your analytical approach? And how did you measure the change and awareness with these patients?

Dr. Chu:

So in our approach, we broke down the NHANES surveys into five-year intervals, so 1999 to 2004, 2005 to 2010, and 2011 to 2016. And within each of those five-year intervals, we looked at all the survey data, we looked at the GFR and the albuminuria—so urine albumin-creatinine ratios—to determine the population of people who had CKD, and among those, that population, we looked at how they answered the question about whether they had ever been told that they had weak or failing kidneys. And from that, we can see how many people, what proportion of the CKD population were considered to be aware of their kidney disease. And we can look at this proportion of awareness over time in these five-year intervals from 1999 to 2016. And then we also looked at awareness in this way overall, and we also looked at it according to the risk of kidney failure.

And so as I was saying before, instead of breaking it up by stages, we broke it up by risk of kidney failure. And so in order to do this, we used a validated equation, The Kidney Failure Risk Equation, to calculate each participant's individual risk score or their likelihood of progressing to kidney failure within the next five years, and then we divided it up into categories from the highest-risk people, so greater than 15 percent risk of developing kidney failure within five years, and then categories in between, and the lowest risk people were people with less than two percent risk of kidney failure within five years. And so we also looked at the proportion of awareness according to each group of risk.

Ashley Baker:

For those just tuning in, you're listening to *Clinician's Roundtable* on ReachMD. I'm Ashley Baker, and I'm speaking with Dr. Chi D. Chu about CKD awareness among US adult patients.

So, Dr. Chu, now that we have a look into your study, can you give us an overview of some key findings and results?

Dr. Chu:

So I think there are a couple of key findings from our study—one is that awareness is low. So awareness of CKD, of people who have CKD largely don't know or haven't been told that they have CKD. That's the main finding, I think. Additional findings were that this proportion of awareness has not really changed over the 15-year period of the study from 1999 to 2016, so I think that shows that there's still a lot of work to do in this arena. And then the other finding related is that even in the people with the highest risk of progressing to kidney failure, so people with more than 15 percent risk—that means that this is the population where almost one in six people are going to be on dialysis within five years. It's a very high level of risk. Only about half of them were aware of their kidney disease. So those

are really the three key findings in our study.

Ashley Baker:

So what are some treatment options and lifestyle adjustments that could help patients with CKD lower their risk of kidney failure?

Dr. Chu:

So I think the starting point is really knowing about the kidney failure or knowing about CKD, and that's diagnosed using lab tests. So part of this is about going to the doctor and getting tested for CKD just like you would be tested for your blood pressure. So again, the first step is identifying kidney disease, making sure that you're tested and that the tests are interpreted properly. And if anything is abnormal, then repeating the test to see if it's persistent because that's the key to confirming presence of CKD.

I would say that in the early stages there are not necessarily specific lifestyle changes for CKD that are any different from lifestyle changes recommended for keeping a healthy blood pressure. In addition to maintaining a healthy lifestyle, other things that are available are certain medications that have been shown to reduce the progression of kidney disease and associated complications, cardiovascular complications, and many of these medications have been the most effective in people with albuminuria. So these are medications like ACE inhibitors, angiotensin receptor blockers, and SGLT2 inhibitors. And we're learning about more of these medications down the line, but this also reinforces the importance of checking albuminuria.

I think when a lot of people think about kidney disease, they're focused on the GFR, they're focused on the creatinine labs, and the kidney function, but albuminuria is a hugely important piece of the puzzle to CKD detection, CKD awareness.

Ashley Baker:

Would this be part of an annual screening? Are these basic labs that our primary care should be doing.? Who would initially make this find or make this catch?

Dr. Chu:

Yeah, so I think this question of testing for CKD is something that comes up in the primary care setting initially. So for patients with diabetes, the recommendation is for annual screening with a GFR and albuminuria test to identify CKD potentially that may be related to diabetes as a complication of diabetes affecting the kidneys. In people without diabetes, the recommendations for kidney disease screening have been less consistent across different guideline-making bodies historically. But at least for people with high blood pressure, which is the other major risk factor associated with CKD—for people with high blood pressure, the recommendation is to check a GFR and also assess urine protein, at least when you diagnose hypertension. I think we and a lot of people feel that the testing should be repeated periodically for people with hypertension, but it's not spelled out in the guidelines, and that's something that could use some clarification in the future.

Ashley Baker:

Before we close, Dr. Chu, in what ways can we help as providers educate this patient population to ensure better outcomes?

Dr. Chu:

A lot of the kidney disease awareness literature, a big piece of it is also focused on kidney disease awareness among providers, among the clinicians. So we know that kidney disease is not necessarily at the top of the list of things to talk about in a primary care visit. We know that a lot of times people can feel uncomfortable bringing the topic up, especially when there's no symptoms and no immediate implications for treatment; although, as I mentioned before, that may not always be the case. It needs to be emphasized more as a cardiovascular risk factor, along the same lines as things like blood pressure, blood sugar, cholesterol because that is the main implication of CKD.

Ashley Baker:

This has been an important discussion regarding the awareness of adult patients with chronic kidney disease. I'd like to thank my guest, Dr. Chi D. Chu, for joining our discussion today.

Dr. Chu, it was a pleasure speaking with you.

Dr. Chu:

Likewise.

Ashley Baker:

I'm Ashley Baker. To access this and other episodes in our series, visit *Clinician's Roundtable* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening.