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Strategies for Mitigating Health Disparities in Patients with Anemia of CKD

Announcer:

Welcome to CME on ReachMD. This activity titled Strategies for Mitigating Health Disparities in Patients with Anemia of CKD is provided by Clinical Care Options, LLC and is supported by an educational grant from GlaxoSmithKline. Prior to beginning the activity, please be sure to review the faculty and commercial support disclosure statements as well as the learning objectives.

Dr. Singh:

Medical Minute 4, Strategies for Mitigating Health Disparities in Patients with Anemia of CKD. My name is Dr. Ajay Singh. I'm Senior Associate Dean for Postgraduate Education at Harvard Medical School, and a Nephrologist at Brigham and Women's Hospital in Boston Massachusetts. These are my disclosures.

The learning objectives for this session is to describe mitigation strategies that can help reduce health disparities among patients of color with the anemia of chronic kidney disease. Let's do a poll. How many patients with CKD do you provide care for in a typical week? And you have 6 options here.

Presurvey. How much do you agree with this statement? Patient's said care will help reduce health disparities in patients of color with anemia of CKD. And you have 5 options.

Now let's turn to anemia as a public health challenge in the United States. Anemia with CKD is a significant problem. More than 1 in 7, or 15% of U.S. adults, or 37 million people are estimated to have chronic kidney disease. Anemia of CKD affects 4.8 million people and is present in 87% of patients receiving hemodialysis, in fact, probably even more than that if you count all the patients who've been on treatment and then come off treatment for a variety of reasons. It's associated with a reduced quality of life, higher rates of CV mortal – morbidities, hospitalizations, and mortality. In the figure on the right-hand side of your screen, you see the prevalence and you see this prevalence according to CKD stages, stage 3A, 3B, stage 4 and stage 5. And you can see that as you progress from stage 3 all the way up to stage 5, you get progressively greater prevalence of anemia.

Turning to disparities in CKD care, and prevalence of CKD by race or ethnicity, on this figure you see the adjusted incident end-stage renal disease rate by rate – by race, ethnicity, and social deprivation index, and this is data from 2020. On the vertical axis is the rate per million, and on the horizontal axis there are 3 data points, data among Whites, Blacks, and Latinos. SDI is depicted in blue 1 to 33, in red 34 to 36, and in gray 67 to 100. And what you can see here is that there is clearly a higher rate of a social deprivation regardless of the type or severity of the social deprivation among Blacks and among Latinos, must more so among Blacks than even Latinos. White considerably higher per million in the population.

When you look at racial disparities and CKD in this next slide, you see the minorities populations at higher risk, Blacks and Latinos that's shown in the figures. But these are also the individuals that experience less medical care, 44% have risk factors for CKD but only 24% are actually screened for CKD. And the prevalence of pre-dialysis care from nephrologists among hemodialysis patients by ethnicity, Hispanic versus non-Hispanic, Latino versus non-Latino, 52% versus 44%. So, clearly not only are black and Hispanic, or black and Latino populations at higher risk in developing kidney failure from diabetes, but they are receiving less care, and they are receiving much less pre-dialysis care.

Disparities in CKD care between black and white persons. Now, there are major domains contributing to racial differences and disparities in quality of care and clinical outcomes for patients with CKD. Shown on the vertical axis is the quality of healthcare and health outcome, and on the horizontal you see columns of either white individuals or black individuals. And you see that the quality of healthcare and health outcomes is lower among Blacks as it is compared to Whites. And this is data from last year published in the *American Journal of Kidney Disease*. If you try and account for possible reasons for this difference, shown in the orange box you see there are a variety of different reasons. The ones I want to focus on are the ones – the bottom 3 boxes. The first one is related to social-based health disparity. This is broader institutional-based discrimination bias and prejudice, racial segregation, economic and educational injustice. And then, healthcare disparity, which is really access and operation of health systems and the legal and regulatory climate that raises obstacles for black patients to receive care efficiently. And of course, discrimination where there are implicit and explicit biases and prejudice, stereotype and uncertainty within the healthcare system that also are obstacles to healthcare. And, as you can see, if you look at this difference, and this is an estimate of course, this limited quantitative data about this, but it's estimated that probably around 2/3rds of the difference between black individuals and white individuals, with respect to quality of care and healthcare outcomes is related to really these social-based health disparities and healthcare disparities more broadly.

The next slide we see disparities in CKD care that relate to socioeconomic status. And here we're going to examine a theoretical model which really posits that there's an interconnected set of mechanisms that underly these associations between socioeconomic status and health. On the left-hand side of the slide, you see in green the socioeconomic status, and here we're talking about education, employment, income and poverty, and clearly you see they're all interrelated, right? It's unfortunate, but probably quite true that people who are better educated have a greater likelihood to be employed, of having a greater income, and much less likely to be classified in a poverty category.

And these socioeconomic status issues are amplified by racial bias, when you look through the lens of race. And then when you look in the big blue box, you see selective social determinants of health and there are a number of these. And I'm not going to spend a lot of time going over individual ones, but you see they're all interconnected. They're interconnected to socioeconomic status, but they're also interconnected to each other. The net result of this is that it impacts on outcomes, health outcomes, morbidity, and mortality.

Now, when we look at this in terms of outcome, this is data that I and my colleagues generated, and this is based on an examinations of NHANES. NHANES is a representative dataset that's very commonly used in examining questions related to the population as a whole in the United States. And here what we've did was we looked at NHANES in an adjusted analysis over a 20-year period from 1999 all the way through to 2018. And on the vertical axis you see percentage and horizontally you see the dots progressively represent different NHANES surveys. And what you see in light blue is anemia as defined by the WHO classification for anemia. Anemia is much more common in non-Hispanic Blacks than in non-Hispanic Whites, blue versus green. And this change over time has actually gotten worse. If you look carefully the percentage of non-Hispanic Blacks who have anemia in 1999, you see it's about between 20 to 25%, and if you see what it is in 2018 in a more contemporary survey, you see it's between 25 to 30%. And I think you can probably recognize that this has some plausibility because what's essentially happened is the rich have gotten richer and the people who are more disadvantaged have become even more disadvantaged.

In the next figure we looked at proportion of African Americans with anemia among patients with advanced CKD. This is stage 3 to 5, and we're looking at a percentage of participants in NHANES with a hemoglobin of less than 10 and you're looking at 3 stages of kidney disease. Less than 15 to 29, that's more severe, 30 to 59, and then greater than 60. On the vertical axis you're looking at percentage and you're also looking in the third dimension all patients, non-Hispanic Whites, non-Hispanic Blacks, Mexican/American or Hispanics and the race including multi-racial. And the thing that really stands out – the column that really stands out is this red column in patients who have a GFR or less than 15 to 29. You can see that there's nearly a 2-to-2.5-fold higher rate of anemia among non-Hispanic Blacks than compared to others. For example, compared to non-Hispanic Whites for patients with more severe kidney disease. But this difference persists even in milder or less severe stages of CKD. And again, this was being presented at the ASN as opposed to just very recently.

Data have been looking at prevalence of CKD in both anemic cohort and non-anemic cohort. This is data from CERA, and on the lefthand side you see these pie charts. And in dark blue you see what the percentage of individuals who are anemic. And again, here you see anemia being much more prevalent among black non-Hispanics, than compared to white non-Hispanics, 50% versus 30%.

Very similar to the data that I just suggested. And this disparity with respect to race is particularly noticeable or meaningful in the anemia cohort, because when you look at the non-anemia cohort the disparity is not there. When you look on the right-hand side, lower socioeconomic status at higher risk of anemia, and you see that patients who are anemic have a greater prevalence of low-income and a greater prevalence, 2-fold, in terms of education less than high-school education, 29% versus 14%.

So, a couple of things from these 2 or 3 slides. One, anemia is a common problem in patients who are not on dialysis. It is particularly worse when you look at this data by CKD stage. And then among patients with more severe CKD, non-Hispanic Blacks seem to have a

nearly 2-fold higher rate compared to non-Hispanic Whites, and that there seems to be a relationship with respect to anemia between income and education.

Now, the other point I wanted to just discuss with you is the issue around treatment in non-dialysis patients with respect to transfusions. And you see that among patients who are stage 3 to 5 non-dialysis dependent CKD with anemia, and when you look at this data from Wendy St. Peters, transfusion is much more common among commercially insured patients than you would have expected, 12% versus those getting it 11%. So, I would have thought that transfusions would be a fairly rare event among insured individuals who are relatively young, less than age 63, but actually 12% of prevalence. And this is an important problem because transfusions have risks associated with them. There's risk of allosensitization, there's risk of hyperkalemia, the risk of tipping patients into acute heart failure. This situation is even worse among Medicare covered patients where transfusion rates are as high as 22% compared to 13% who are being treated with ESA. The reason I bring this data up is when you look at this and when you think about looking at this through the lens of disparity, we already understand that patients who are less advantaged, who are non-white, either Latinos or African Americans, have a much harder job of getting through the complex myriad of an average health system to get things like blood transfusions, right? So, the bottleneck is even worse in these patients. So, it's not simply that there's a disparity with respect to having anemia, but even anemia treatment can be a real problem.

Now, socioeconomic determinants of health and the role of anemia in this is shown in this next figure. And as we already discussed, it's complicated, right? There's an interaction between biology and environment and shown here is the interplay between a variety of different factors. And so, on the one hand you have common poses of anemia and CKD on the right-hand side, erythropoietin deficiency, iron deficiency, blood loss, and so on, and on the left-hand side you can see that when you look at this through the lens of social determinants to care, it's complicated. Many different reasons and many different factors interplaying with each other. And whether you apply this to blood transfusions, or you apply this to conventional ESA therapy, it probably explains why African Americans have a much higher rate of anemia with advanced CKD. They're either not getting the treatment or getting access to the treatment. It's very problematic.

So, how do we improve this? Through improvement of health disparities. There are 2 broad factors that I think are at play and then there's treatment and monitoring. So, on the left-hand side you see the patient-centered care factors are important and can be fixed, right? So, getting patients earlier diagnosis, earlier screening, making sure that they intersect with the health system requires you to assemble a multidisciplinary care team. Developing strategies for educating patients, asking patients about, and thinking about social determinants of health, identifying community resources, including patients' caregivers so patients can increase treatment and educational efforts, and constantly reassessing, almost like in a PDSA-cycle. Just to give you an example of this, you know, we know for example that African Americans spend a lot of time going to church, you know, in the community. That's an important aspect of their life. Getting education through individual's churches – church might be a way to access. So, you have to try to think out of the box with respect to this. And assembling a multidisciplinary care team that can actually access, sort of, nonconventional ways of educating patients might be important.

Identifying and diagnosis, leveraging and implementing detection protocols, leveraging health information systems, promoting detection at every opportunity, measuring, tracking, and improving, all important. And then, last but not least, and as I said, treatment and monitoring and keeping as our North Star of the idea of integrating evidence-based guidelines, educating patients, and then monitoring them to see how they are over time as their disease progresses.

Addressing healthcare disparities can improve CKD outcomes. For example, Native American patients previously had a high rate of diabetes-related end-stage kidney disease, but this problem of diabetes-related renal failure has been improved with initiatives that have addressed healthcare disparities. Developing clinical education programs and tools to manage that culturally relevant patient education materials, and then using the electronic medical record to manage these patients through alerts and screening tools. Healthcare provider to clinical communication, or hand-offs, are important. The interdisciplinary healthcare delivery models that are mentioned here, like the intersection between the primary care physician, nephrologist, and hematologist. The use of patient navigators and community health workers, and really the leveraging of the renal and hematology teams is important. And as you think about this, across the care continuum, these teams and these models intersect at various points – critical points in this healthcare continuum.

Addressing health literacy and language barriers is important. There are many effective methods. This has been demonstrated in a number of different studies that are cited focusing on important points and avoiding medical jargons to communicate important information using teach-back techniques where the patient repeats the information in their own words, and then using visual medication schedules like the one shown on the right-hand side of the screen that's translated into different languages. These are all tools that can be leveraged in order to improve the ability of patients to access care. You can also leverage family members to improve this. Family members are usually a trusted part – individual within the healthcare team – the multidisciplinary healthcare team. They are often aware of the cultural challenges, they're aware of the language barriers, and can serve as a liaison between the patient and the healthcare

provider. And this can be of great value also because as the teams manage all these patients in this more holistic way, family members can actually play a very important role in moderating the amount of work that these healthcare teams have to take on in order to make it happen. And as I said, family members can be very useful as interpreters and be able to help patients navigate a very complex environment with respect to accessing care.

I'm not going to spend a lot of time on this, but this is a really nice schematic that has been presented by Dawson and Colleagues and really talks about the fact that you really need to do things in parallel. It's not an iterative process of let's try strategy 1, then move to strategy 2, and then move to strategy 3, you have to think of individuals first of course, then you think about the microsystem around them. The exosystemic around that microsystem, and then the macrosystem. And of course, the macrosystem is very difficult to change, right? Very difficult to change laws, culture, history, economy. But they are all important and you need to think about these things in parallel.

It's also important to increase participation rate in clinical trials. Clinical decision-making is based on studies of research participants currently, or mostly white, and increasing the involvement of participation of non-white participants, I think is important.

So, let's now turn to an assessment. How much do you agree with this statement? Patient-centered care will help reduce health disparities in patients of color with anemia of CKD. And there are 5 options for you to consider.

So, in summary and conclusions. Racial minorities are at higher risk for chronic kidney disease, I think that that's been shown in numerous studies. There are quality gaps in the care of racial minorities, and there's a lot of complexity around why this happens, and I shared some of the complexity and the interplay with many different factors. CKD anemia is much more common in Blacks and this anemia increases the blood transfusions, but blood transfusions in and of themselves are not a panacea, because in order to get a blood transfusion, you need to access the healthcare system and there are bottlenecks.

And these bottlenecks are much more severe in patients who are non-white. Social determinants of health are important factors in CKD anemia. You need to think of this as overlapping factors from the individual, sort of microsystem to the exosystemic, to the macrosystem. And strategies to improve disparities will need to be multipronged. A cookie-cutter approach, or one-size-fits strategy will not work for everyone.

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