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DKA in Focus: What the New Consensus Means for Practice

Announcer:

Welcome to CME on ReachMD. This activity is the first in a series titled "In the Range: Real Talk on Diabetes Monitoring Best Practices." This is episode one, titled "DKA in Focus: What the New Consensus Means for Practice," is provided by Cornerstone Medical Education and AACME and is supported by an educational grant from Abbott Diabetes Care.

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Dr. Dhatariya:

So a new international consensus document on continuous ketone monitoring, or CKM, for people with diabetes was published in January of 2026 in *The Lancet Diabetes & Endocrinology*, and today, really, what we're going to focus on, on how that translates into clinical practice.

This is CME on ReachMD, and my name is Ketan Dhatariya, and I'm a diabetes doctor from Norwich in the UK. And joining me today, to discuss the CKM consensus document is my colleague Jen Sherr from Yale. Welcome, Jen.

Dr. Sherr:

Thanks, Ketan. Excited to be here today.

Dr. Dhatariya:

So let's get straight into it. I'm going to just give the audience a bit of a background about DKA and ketosis in general, and then we'll talk more about the consensus document in due course. So let me just remind the audience about ketones. Ketones are extremely important because they are the alternative energy substrate that the cells use when there is no carbohydrate around. We know that when you eat, of course, if you eat carbohydrate, that's the main stimulus for insulin secretion, but if you have a period of prolonged starvation or if your insulin doesn't work or you don't have enough, then this glucose can't enter the cells, and that means that those cells are starving and they need an alternative energy substrate. So, what happens is that the lack of insulin allows for fat breakdown, those free fatty acids are liberated, taken up by the liver, converted into these little things called ketone bodies where they are taken up into the circulation where they are used by the cells, but if you have too much or they appear too fast, then that can be pathological. And what happens is, from an evolutionary point of view, they are very beneficial, because there's lots of data to suggest that ketones are very, very useful, particularly for your heart and your brain, and there are some studies going back all the way back to the '70s which show that if you give healthy individuals and you starve them and you give them nothing but water over a period of four or five or six weeks, then ketone concentrations can rise to five or six or seven or even more millimoles per liter. And, of course, when that the threshold for diabetic ketoacidosis is 3, you start having palpitations, but of course, because those ketones appear quite slowly, you have time to respiratory compensate and renally compensate. So there's quite a lot going on.

I've already mentioned diabetic ketoacidosis. We know that that's a life-threatening condition in people with diabetes, both type 1 and often type 2 diabetes, and one of the things that we want to try and talk about is to see whether people with diabetes know about DKA, what the information they need. Jen, tell me what you think about what information is out there already.

Dr. Sherr:

Yeah. So I think that there's a lot of information that is, unfortunately, lacking for individuals living with diabetes, right? They don't recognize that they're at risk. They're not checking for ketones. They find that the methods that are available to check for ketones are not being used or are underutilized. And what we know is that DKA is the most common hyperglycemic emergency that people experience, and it can be a leading cause of death, both for adults and children living with diabetes. And the prevalence is variable. Anywhere between 1 to 13% of individuals living with type 1 can experience DKA in a given year, and that it does cause a number of hospitalizations.

And some interesting studies have occurred looking at even just the use of flash glucose monitors, and they've shown that while there's reductions, we can't eliminate DKA just by measuring glucose alone. And I think that's really critical, and it speaks to the fact that we as healthcare providers need to be providing people the information about times they need to be measuring ketones, discussing how they're going to respond when these situations occur. And what's exciting is that we're finally at the precipice of having a new modality to go ahead and check. That's really going to hopefully enlighten both providers and people with diabetes alike to the existence and presence of ketones.

So we've done some studies where we've suspended insulin delivery and gone ahead and seen people's glucose and ketone levels rise, and one of the things we realize is that that rise of glucose and ketones is not parallel. We can see ketones rise before glucose does.

Dr. Dhatariya:

And so, what are the problems with current ways of ketone monitoring then?

Dr. Sherr:

Yeah. So I think there's a lot of problems. The biggest problem of them all is that it relies on the person with diabetes to remember to do the test, right? And so if I'm only thinking, "Hey, I have to do this if my blood sugar is high," I'm missing a lot of opportunities to measure.

When we think about the two methods that we have right now, we can measure urinary acetoacetate. The problem there, it's not the predominant ketone body in DKA. So, when we're looking at it, really the predominant ketone body is going to be beta-hydroxybutyrate. And so acetoacetate is the end product that we're excreting out, and so it can take longer to see that rise occur, so you're not seeing that evolution of ketones. And then, as we're clearing ketones, if we're doing urinary measures, we're getting a sense that things are delayed, that we're still having issues when, in actuality, the situation is resolving. So, you need to have a bathroom. You need to be carrying the urinary ketone strips. You need to remember to do it. And so it's very problematic just in terms of the urinary measures.

Now, what about the other method that we have? We can do capillary measurements. How many people do you know nowadays who are carrying around, a finger stick glucometer? I mean, I beg people to carry one as a backup. It never happens. And so the concept of "I'm not even thinking about measuring my glucose," people are not going to measure their ketones. So it's great we have these point of care capillary beta hydroxybutyrate, home meters, but again, it requires you to do a finger stick, carry supplies, and initiate that test. So there's methods, but they're completely underutilized.

Dr. Dhatariya:

So, what's this thing that's on the horizon? Tell us more about the continuous ketone monitoring device. Do you know more about it?

Dr. Sherr:

So the continuous ketone monitoring device is going to leverage what we all have been able to experience with continuous glucose monitoring for the past 20 years. It's going to allow passive data capture where we're going to be able to see ketone measurements, every five minutes and be able to go ahead and have a safety net built in the background. Some of the nice things about it are that it's not going to require a second site insertion. It can be in a dual monitor. So again, it's reducing the burden for the individual with diabetes. You don't have to initiate the test. You're constantly getting that information available. And I think one of the most important things when we consider how these devices will be used, when we think about continuous glucose monitors, when they first came out, people had an onslaught of information. It was like data overload. And so I think we've learned so much about how to practically make something a usable tool.

Dr. Dhatariya:

For those just tuning in, you're listening to CME on ReachMD, and my name is Ketan Dhatariya. I'm a diabetes doctor from Norwich in the UK, and today I'm speaking with Jen Sherr about the new CKM recommendations and the consensus document that was published in January of 2026 in *The Lancet Diabetes*. And we spoke a bit earlier about the importance of monitoring ketones in diabetes, and now we're going to shift to the new recommendations.

So that's a good place. I should introduce the document that we published in January of 2026, as I mentioned, in *The Lancet Diabetes & Endocrinology*, myself and Jen Sherr, and there's about 30 of co-authors from all over the world. And I think it takes us back to the very beginnings of CGM where, as you just said, that we had all of this data, but we didn't know what to do with it, and it's taken a long time to develop the use and to really fine tune what we do with glucose metrics. And what we've done, in the consensus document for continuous ketone monitoring is really plant a stick in the sand, really, to say, "This is where we need to start from, and then we can start, developing the metrics, using the metrics, understand what the data is saying." And so really for the lay user and for people who—we know none of us have used it because it's not out there yet, so we've just said a number of different thresholds based on just clinical experience that users can start, and what action should be taken. And just for your information, the audience really, is just to say, well, from zero to 0.6*, that's completely normal. We know that that's normal. If you were to starve and you didn't have diabetes by this time tomorrow, we'd all have less than 0.6, one would hope. But really, then if you get to 0.6 to 1.5, that's elevated. You just need to be aware. Maybe you need to just check your blood sugars. Maybe you need to start taking some carbohydrate, taking your insulin, making sure everything's okay. 1.5 to 3, that is high, and you need to be taking a bit more seriously because that, of course, you are on the precipice of developing ketone concentrations which would be compatible with a diagnosis of DKA. And again, you may need to seek medical help. You may need to take some carbohydrate, follow what I in the UK would call sick day rules. So what to do. You need to take extra insulin, extra carbohydrate. I'm sure most of the audience, most of the medical professionals, most of the patients hopefully will have got the education about what to do. And of course, if you've got a thresh, if you've got a ketone concentration, which is telling you is above 3, you need to seek medical help fairly swiftly because you may be in frank DKA.

The other thing that this technology, which we are told will offer us is, that we have arrows. So similar as right now we have with a CGM, you have the arrows going up with the glucose going up and ketones or glucose going down, for example, we can have the same kind of thing. And there's a difficulty in knowing what becomes pathological and what becomes physiological in terms of rate of change, because nobody's had this technology before. And so we think that it's going to be around about 0.4 millimoles per liter per hour that the thresholds are going to be changing, and so I think it just needs to—again, it's one of those things we're going to be on a learning curve. But actually, the other thing we need to know about, and again, this is up for discussion, what action should we be taking when we get certain thresholds? Jen, what do you, what do you think?

Dr. Sherr:

Yeah, so one of the things I love about this document that was just published is that there are some suggested actions included right in there. And, I like the fact that it's almost like a stoplight appearance in terms of how everything's laid out. Green, everything's good, yellow, we've got to be thinking about things; and then red, really drawing our attention to it.

Dr. Dhatariya:

That's a good point. It's not new. It's just putting into practice what everybody should be doing anyway. It's just giving a new pointer, a new measurement. So tell me, what do you think about potentials? Where are the potentials for this, for this new technology?

Dr. Sherr:

We have individuals who struggle with engaging with their diabetes management, and we have people who are frequently coming in and having episodes of ketoacidosis, and so I look forward to offering this as a tool that will help us avert those hospitalizations. But at the same side of things, we know many people are not testing for ketones. So, a family will no longer say, "It's the stomach bug." No, actually, your child has ketones. Maybe an infusion set has failed. We've got great technology out there, but the technology still has flaws in it. An infusion set could fail. I need to be thoughtful about things like this occurring. And then to me, the potential of integrating some adjunctive therapies, SGLT2s, I would love to see access to that type of therapy for individuals living with type 1 in the future.

Dr. Dhatariya:

So I'm just going to step in there and just to remind the audience that SGLT2 inhibition—inhibitors are not licensed or indicated for people with type 1 diabetes just yet, so please don't use them routinely. Only use them if you've got somebody who is really very well educated and understands sick day rules and knows what to do if they become unwell on them.

So, Jen, we're just coming up for the last few minutes, and I know that, we have an MDT, a multidisciplinary team, that worked in people with diabetes. We have diabetes educators. We have our dietitians. We have our podiatrists. We have our nurses. We have our physician colleagues, of course. What are the downsides of this technology, if there are any?

Dr. Sherr:

You know, I don't think there's downsides to it. I think it's just making sure all members of the team understand the technology. I know in my practice, I work with an amazing group of nurse coordinators, our social workers, our psychologists, our dietitians, our advanced practice providers, and all of us talking about things together. School nurses are calling in. They're going to reach out to our nurse coordinators. Our social workers can be talking about how this is going to keep people who are at risk, hopefully out of the hospital and

stabilize more. And so really, taking that team approach of the way we do with everything else, incorporating a new technology into clinical care delivery, and just making sure that we all are aware of suggested action plans and what the data that these devices will show.

Dr. Dhatariya:

Yeah, so in the last couple of minutes, Jen, I know we've got an example. I'd love you to go through it and just explain where CGM could have really helped.

Dr. Sherr:

Yeah, so this is such an interesting case. This is a, a 14-year-old young girl who was involved in a study where it was actually going to be assessing the glucose measurements of this particular sensor, which was collecting data in a blinded fashion. So she had the sensor placed. You can see that red star indicates a glucose measurement at the time of the sensor placement, and you can see she's hyperglycemic. But what you'll notice is that in the slide we're seeing not only the glucose in blue but also the ketone measurements in green, and what you'll notice is that for many hours prior to being hospitalized in DKA, her ketone levels were elevated. And what this case shows me is that there is this window of opportunity that when we have data available and, can employ our DKA mitigation plans, we can avert these types of hospitalizations. And look at what happens when insulin is started and things are correcting. Things come down so rapidly. So I really think that this shows us the potential of how this tool can be used in clinical practice when it's commercially available.

Dr. Dhatariya:

That's fantastic. Listen, I know we're coming to an end. Jen, can I just ask you for some final thoughts where you think that the advantages, disadvantages, anything that you'd like to wrap up with?

Dr. Sherr:

Yeah. I mean, when I think about the potential of ketone monitoring, it's all advantages. I can't think of disadvantages. In the end, as a person living with diabetes and as a provider who takes care of individuals with diabetes, more data is better, and we are using what we've learned with CGM to do this in a mindful manner and understand that, how to collect this data and act on the data and not just provide somebody this continuous stream. It's usable and actionable.

Dr. Dhatariya:

Listen, that was a great way to end our discussion, and I'd really like to thank my guest, Dr. Jen Sherr from Yale for helping me better understand the new recommendations on the use of this new technology called continuous ketone monitoring for people with diabetes. Listen, Jen, it was great to talk to you. It's great as always. Thank you very much. And thank you every, everybody for listening and for joining us today.

Dr. Sherr:

Thank you.

Announcer:

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