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Taking a Closer Look at the Significance of Nutrition in Managing HIV

Dr. Turck:
Although a well-rounded diet is important for all patients, research has shown that those living with HIV are more likely to be malnourished and experience nutrient deficiencies that play an essential role in their immunity, and that's why the role of nutrition and specific considerations for those living with HIV is the focus of today's program.

Welcome to *Clinician's Roundtable* on ReachMD. I'm your host, Dr. Charles Turck, and joining me is Dr. Sorana Segal-Maurer, who is the Director of Infectious Diseases at New York-Presbyterian Queens and Professor of Clinical Medicine at Weill Cornell Medicine.

Dr. Segal-Maurer, thanks for joining me today.

Dr. Segal-Maurer:
And thank you, Dr. Turck.

Dr. Turck:
Let's start our discussion with some background. In the early days of HIV, what was the focus of nutrition in this patient population?

Dr. Segal-Maurer:
The early days of HIV were certainly very dark days. The average lifespan was incredibly short in many people diagnosed with HIV. Once we had the ability to run the tests for diagnosis, their mortality was incredibly high. Lifespan could have been measured in days, weeks, or months, unusual to measure it in years, so our focus in their care was really to keep them alive and to take care of multiple concurrent opportunistic infections.

So HIV wasting was incredibly widespread, and it was almost like a disease in itself, so our focus when it came to nutrition was really not based on cardiovascular considerations whatsoever. A typical recommendation was to really increase the calorie count, and we used to recommend several pounds of pasta a day with several sticks of butter. We used to recommend Haagen-Dazs ice cream, not specifically a trademark, but it happened at the time to be the highest fat content. Protein was a lot harder to get into some of these HIV-wasted patients. Their appetites were terribly poor, especially in the setting of opportunistic infections and oral and esophageal candidiasis. They were better able to tolerate the carbohydrates, and we pushed them. And I have to confess, I do not think I remember getting cholesterol profiles, worrying about any of those things because, really, our goal was to feed and to keep them alive.

Dr. Turck:
And how has this focus on nutrition changed now that this patient population is living much longer?

Dr. Segal-Maurer:
Yeah, so our focus on nutrition has really come 180 degrees. It's just been incredible being somebody who was there in the very early

days of HIV and being here now, taking care of our people living with HIV. So a couple of things that we keep in mind—the first is the average lifespan—once you are diagnosed with HIV, once you are started on antiretrovirals, you are linked to care, stay in care, do all the tests that you need and the preventive medical management. The average lifespan we know from the NA-ACCORD trials, and mathematical modeling is anywhere into the seventh or even eighth decade for somebody who enters in their second decade, so we're talking really looking down the line at 50, 60 years, so we no longer are cavalier about not getting cholesterol tests, not looking at vitamin D, and ignoring some unhealthy lifestyle choices, so we're very proactive.

The other thing that we've looked at and taken into account—so again, we're going down the timeline of antiretrovirals—our older antiretrovirals, we first started with a nucleoside reverse transcriptase inhibitors. They were the thymidine analogues. They had a lot of mitochondrial toxicity, so that certainly wasn't helpful for lipoatrophy, lipodystrophy, lipo accumulation, which we know leads to significant metabolic disorders. That's all we had. There was really no options. As we moved through, the non-nucleoside reverse transcriptase inhibitors were approved, such as efavirenz, and we know that also efavirenz has a negative effect on adipocytes and vitamin D—and then the boosted protease inhibitor era. They truly saved many patients' lives, but the downside were a number of metabolic syndromes. We know that insulin resistance at the cellular level, we know the dyslipidemias with ritonavir boosting, all of it strong associations with cardiovascular disease and other comorbid conditions. Where we are now is our antiretrovirals are much more tolerable with significantly less metabolic footprints, so we've really been able to achieve a better balance, and we're just much more sensitive about keeping our patients alive and healthy.

Dr. Turck:
And are there any other effects that antiretroviral agents have on nutrition considerations?

Dr. Segal-Maurer:
So the other issues that we think about with antiretrovirals is how do you take them? Are there interactions with other nutrients that you are taking or possibly supplements, vitamins, things like that? For example, are certain antiretrovirals that require a very large meal. And it's not necessarily the caloric content or the percent fat in the meal, percent carbohydrates, etc. It's really the size of the bolus. And the reason that's important—and I think the best example would be rilpivirine, which is in a number of single-tablet preparations—is that if you do not take rilpivirine with the largest meal of the day, it will literally transit through the gut, so the bioavailability is limited, and then eventually, there's loss of virologic suppression with mutations, so we always counsel our patients who may be on something like rilpivirine or maybe a boosted PI the size of the meal, the content of the meal.

And I think what is very important to me because we've been doing nutrition with HIV for so very many years, actually decades, is you need to be really specific because what's a big meal to me is not a big meal to my patient, so I don't think we should mince words. I think we need to be very concrete with lots of different examples and examples that fit into that person's regional background, ethnic background, maybe religious background, anything that may change how it is they eat and what it is that they eat, so we need to be very sensitive about that. So the bioavailability piece is incredibly important. We need to know what we're giving and what it needs for optimal bioavailability.

The last piece that I do want to mention is to take advantage of antiretrovirals that maybe don't need to be taken with food, and if our patients' lives have changed and they're not really eating, proactively coming in and saying, "You know, you're not really eating with this the way you need to be. Let's go ahead and change you to something that is easier for you in your life or in your schedule."

Dr. Turck:
For those just tuning in, you're listening to *Clinician's Roundtable* on ReachMD. I'm Dr. Charles Turck, and I'm speaking with Dr. Sorana Segal-Maurer about the role of nutrition in HIV.

Now, Dr. Segal-Maurer, what are the risks for cardiometabolic syndrome in HIV that we should be aware of?

Dr. Segal-Maurer:
So cardiometabolic syndromes, discussion around weight, discussion around cardiovascular risks are very, very hot topics in HIV right now. So the cardiometabolic syndromes—and I'm going to also add weight to cardiometabolic syndromes—are all multifactorial, as I'm sure you're very well aware of. They have to do with genetics. They have to do with lifestyle. They have to do with nutrition. They have to do with mental health and just many, many different factors. The other thing that we talk a lot about is we always address healthy

eating with our patients, but sometimes healthy eating is divorced from caloric intake. In some examples I have patients who are completely horrified when their cholesterols are just absolutely elevated to very dramatic levels. Meantime, they feel they're having a healthy diet, and then they, of course, tell me that nuts are very good, so they're eating two bags of almonds a day and maybe a few avocados in a shake.

The last piece that I think we as providers are always concerned about is are we giving our patients an antiretroviral that is increasing their risk? There is a lot of attention being paid to that because, for many of us, it's something that you can change. For a number of years, there was concern that tenofovir alafenamide was a significant risk factor for increased weight because we saw in our patients that we were switching from tenofovir disoproxil fumarate, which actually has a negative impact on adipocytes once you switch to TAF or tenofovir alafenamide, there was a bump in the weight. Well, it turns out that removing it doesn't really make a big difference when it comes to weight or cardiometabolic syndromes, and for some patients it leads to virologic failure, so I want to put out a cautionary word to the providers listening that sometimes switching out or removing something that we think could be impacting this is not always in the best interest of the patient.

Dr. Turck:
And why should we keep patients' socioeconomic statuses in mind when recommending nutritional interventions in this patient population?

Dr. Segal-Maurer:
Socioeconomic status adds a very complex layer to nutrition management. We all talk about the Mediterranean Diet, and make sure you have plenty of fish and salmon and vegetables and whole grains. When we have some of our patients who are possibly undocumented in our country, who are may be supporting a very large family from day labor wages, I think it wouldn't make sense for us to suggest that kind of a diet, and it also wouldn't be palatable for many of our patients who are coming from other parts of the world, so I think we need to be very sensitive to what it is we recommend depending on socioeconomic status depending on what geographical area they come from because olive oil may not be very tasty for them. Our greatest challenge, Dr. Turck, is our patients who are homeless, who do not have an established domicile, who have food insecurity, who are eating at soup kitchens and other areas where they are able to get food because many of those tend to be very high in carbohydrates, very high in calories in order to be satisfying but not always healthful, so that socioeconomic layer can be very challenging for many of us to try to help our patients.

Dr. Turck:
Lastly, what are some recommendations for nutritional supplements or vitamins in patients living with HIV?

Dr. Segal-Maurer:
So recommendations looking at supplements and vitamins, I think we all agree vitamin D supplementation in the setting of deficiency is very important, so I think we are all on board with that. Other than that, I think many of us are on a spectrum. There are providers that are incredibly supportive of just extensive supplementation and just numerous vitamins. I tend to be on the other side of the spectrum because unless there is very specific malnutrition or specific significant vitamin deficiencies or mineral deficiencies. A single multivitamin with iron and minerals is important. Again, be careful not to dose it at the same time as your integrase inhibitor—again, going back to some drug-drug interactions. Other than that, if there's any way they can access a balanced diet, as long as they don't have intolerance, and as long as they have that ability to buy the components of a healthful diet, I very much push for that. I push for the protein. I push for the vegetables, the grains.

I'm not one that's going to take out the prescription pad and just give a lot of vitamins and supplements, but clearly we do need to address significant deficiencies.

Dr. Turck:
Well, these have been such important nutritional considerations for our patients living with HIV, and I want to thank my guest, Dr. Sorana Segal-Maurer, for joining me today and for sharing her insights.

Dr. Segal-Maurer, thank you for a wonderful discussion.

Dr. Segal-Maurer:
Thank you, Dr. Turck, for the opportunity. It's been fun.

Dr. Turck:
For ReachMD, I'm Dr. Charles Turck. To access this and other episodes in our series, visit ReachMD.com/CliniciansRoundtable where you can Be Part of the Knowledge. Thanks for listening.