Transcript Details
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How Can Diet Impact IBD Treatment & Management?

Dr. Nandi:
Diet and IBD. Just looking back over the last 100 years, the components of the average Western diet have evolved dramatically. Indeed, the environmental influence on developing IBD and influencing IBD disease activity are both distinct, yet both have been associated with different patterns of dietary intake. Quite simply, clinicians and patients are all asking the same question: How can diet impact IBD treatment and management?

One landmark study recently published in *Gastroenterology* begins to address this complex query. That trial is known as the DINE-CD study, entitled “Diet to Induce Remission in Crohn's Disease.”

On this episode of *GI Insights*, we have the esteemed honor of hosting the primary investigator, Dr. James Lewis, of the University of Pennsylvania IBD center. Dr. Lewis is a Professor of Medicine and Epidemiology at UPenn. He is also the Associate Director of the IBD Center and Senior Scholar in the Center for Clinical Epidemiology and Biostatistics. Among Dr. Lewis’s many accolades, he is also the recipient of the Sherman Award –for propelling transformative research excellence in IBD. And he has chaired the Crohn's and Colitis Foundation's National Scientific Advisory Council, NSAC. Both organizations in part help to fund this trial.

Dr. Lewis, we are honored to have you on *GI Insights*, and welcome to the program.

Dr. Lewis:
Thank you so much, Dr. Nandi, for the invitation. It's really a pleasure to be here today.

Dr. Nandi:
Now this is a great honor to have you on the program. This is a very intriguing study; there's very few studies that have ever been conducted to my knowledge as the DINE-CDs study. This is a randomized controlled trial looking at the impact of a specific carbohydrate diet and the Mediterranean diet for mild to moderate symptomatic Crohn's disease. I want to begin from the very beginnings. What are the origins of this study?

Dr. Lewis:
There's a system in place called IBD Partners, which is an online cohort of patients with inflammatory bowel disease. And on the IBD Partners forum, patients have the opportunity to propose research questions that they think would be important to be addressed. And then other patients can endorse various questions if they think it's a good question.

And early after IBD Partners went live, the question of the role of diet in inflammatory bowel disease came to the top and was endorsed by lots of people. And specifically, patients were interested in the role of specific carbohydrate diet for Crohn's disease and ulcerative colitis.

Dr. Nandi:
Yeah, I have read that the SCD diet was I think originally developed in the 1920s by a pediatrician and more popularized, I think you mentioned this in the publication actually, by Elaine Gottschall, who wrote a book in the late 80s that kind of popularized this diet, but it hasn't been well studied. So how did you pick the control diet? How did you pick the Mediterranean diet?

Dr. Lewis:
The choice of a Mediterranean diet as the control was built on a couple of concepts. One was that the Mediterranean diet has been associated with a lower incidence of Crohn's disease and, again, in relatively uncontrolled data, reduce symptoms and improved quality of life for Crohn's disease. But it had also going for it a long history of well-designed studies demonstrating some overall health benefits

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such as reduction in all-cause mortality, cardiovascular disease, and cancer. And this has led the USDA to have their global recommendations for diet to largely reflect what would be considered a Mediterranean diet.

Most of your listeners probably have some familiarity with a Mediterranean diet, which is characterized by high intake of olive oil as the main source of fat, lots of fresh fruits and vegetables, nuts and cereals, some moderate intake of fish and poultry, a glass of red wine with meals if you're so inclined, and importantly, really limited intake of red and processed meats, sweets, and processed sugars.

Specific carbohydrate allows people to eat all the unprocessed sort of meats and fish and poultry that they might be interested in; they can have most vegetables, most fruits and nuts and some legumes, but there's really complete avoidance of grains and dairy, other than some hard cheeses that have low lactose content and homemade yogurt that's been fermented for 24 hours. And again, there's no other sweeteners, really, other than honey; that's the one sweetener that's largely used.

So there's some similarities, some differences. We pick Mediterranean diet mostly because it has these extra health benefits. And it's very consistent with what the USDA recommends.

Dr. Nandi:
Can you elaborate more just on what types of Crohn's patients were enrolled or excluded from this study? And then how these specific diets were tailored? How did you get these diets into the hands of the patients?

Dr. Lewis
Sure. The study focused on patients with mild to moderate Crohn's disease symptoms. And so these are people who are having a little bit more bowel movements than normal, a little bit of belly pain, feel a little bit unwell, but not the severely ill population. We excluded people with an ostomy, mostly because you can't calculate standard indices of disease activity if they have an ostomy. And we excluded people who had symptomatic stricturing disease, in large part because both of these diets were going to result in people consuming more fruits and vegetables than perhaps they were accustomed to. And obviously, if somebody had a tight structure, we wanted to avoid the risk of promoting a bowel obstruction. There's a whole host of other exclusions, but those are sort of the big standout ones.

The second part of your question was, how did we get people able to follow the diets. And one of the unique features of the trial was that for the first six weeks of the study, we provided patients with all of their meals. They essentially got breakfast, lunch, and dinner and two snacks of prepared foods delivered to their home, so that on Fridays, they would get a week's worth of food delivered. All they had to do was take these meals and microwave them or put them in the oven and they would be ready to eat. And it didn't matter which arm you were on. If you're in the specific carbohydrate diet, you got meals that were consistent with specific carbohydrate diet. If you're in the Mediterranean diet, you got meals that were consistent with Mediterranean diet. And then for the second six weeks, people were on their own to purchase and or prepare their own foods, they did have the option of using our food vendor..

Dr. Nandi:
For those just tuning in, you're listening to *GI Insights* on ReachMD, and I've been speaking with Dr. James Lewis on his landmark randomized controlled trial comparing the specific carbohydrate diet to the Mediterranean diet assessing the potential to induce remission in mild to moderate Crohn's disease patients.

Let’s kind of hit the highlights now. What did you find at the week-six outcomes of this trial or beyond in terms of Crohn's disease activity? And in terms of some of the secondary markers or outcomes that you all looked at with CRP inflammation and calprotectin, pre- and post-intervention, what did you guys find?

Dr. Lewis:
Our primary outcome was whether people could achieve symptomatic remission by six weeks on the diet. And we measured that using what's referred to as the short Crohn's Disease Activity Index, which only accounts for the symptomatic components of the index. And interestingly, the two diets performed almost identically with 44% of those in the Mediterranean diet and 47% of those on specific carbohydrate diet achieving symptomatic remission.

We also looked at the more traditional full Crohn's Disease Activity Index and what we refer to as clinical remission. And again, the results between the two diets were almost identical, 48% and 49% achieving clinical remission.

Some of the more relevant secondary outcomes were what we termed fecal calprotectin response and CRP response. And these required reduction in calprotectin below a threshold and greater than 50% or reduction in CRP below a threshold and greater than 50% in those who had elevated markers at baseline. And for both of these again, there was no significant difference between the two diets.

Interestingly, about a third of the people achieved our definition of fecal calprotectin response at six weeks, whereas for reduction in high-sensitivity CRP to below 5 and 50% reduction, it was only about 4% and 5%, in the two groups, respectively. So very few people

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were able to have normalization of their high-sensitivity CRP below 5 milligrams per liter and with at least a 50% reduction.

Dr. Nandi:
It's interesting and maybe very encouraging, right? That you were able to see such a reduction in the calpro?

Dr. Lewis:
This is a glass-half-full, glass-half-empty result. Ironically, Mediterranean diet has been associated with lower CRP levels, not necessarily looking at the sort of changes that we were trying to achieve. And so I do think it's important when people think about these, you need to put this into the context that yes, we saw some improvement in calprotectins, it wasn't significantly different between the group, but CRP reduction was quite uncommon. And so I think it takes us back to any other therapy that we're using. Some things improved symptoms, some things improve inflammation, we would love for therapies to improve both. But having your symptoms get better does not guarantee you that your inflammation is getting better. And I think if you choose to use one of these diets as a primary or adjunctive therapy for your patients, you need to keep that in mind and monitor the inflammation whether you're doing it with biomarkers, endoscopy, imaging, et cetera.

Dr. Nandi:
How has this diet influenced or changed what type of dietary advice you would give a patient with mild to moderate Crohn's versus a patient that has more moderate to severe active disease?

Dr. Lewis:
For the person with mild to moderate Crohn's disease, I think that you have to start the conversation with them to understand their goals. Do they want diet to be a primary source of therapy? Or are they looking for diet as an adjunctive therapy?

If they're looking for diet as a primary therapy, I explain to them the rationale behind diet is therapy in general and emphasize things such as how effective exclusive enteral nutrition can be when used in the short term, which is not a whole-food diet, and then talk about the fact that we need to think about what are the whole-food diets that they could use after exclusive enteral nutrition or in place of that or with partial annual nutrition. And so then I typically, I will tell them about Crohn's disease occlusion diet, Mediterranean diet, and specific carbohydrate diet and review the various evidence that would support these different diets. And as I mentioned, I also explain to them this is just like any other therapy. We try this for a little bit, we assess your symptoms, we assess your inflammation, and then make decisions about where to go next.

For people who are really just looking for something as an adjunct, then Mediterranean diet is my go-to answer for them. I can use the results of the DINE-CD trial to justify that in terms of their Crohn's disease symptoms. And I can use a broad swath of studies that have been done over the years to highlight the fact that being on a Mediterranean diet may also be associated with a number of other additional health benefits.

I do like to put a cautionary note into that last comment to say that I don't know that these other diets wouldn't have those same health benefits. For example, specific carbohydrate diet may have the same health benefits as a Mediterranean diet just because we're getting rid of processed sugars. And maybe that is really where some of the answer lies. But those studies have not been done. And I do have existing evidence that I can draw upon for Mediterranean diet. So when looking for that ancillary diet, that is, to me, the easy answer at this point.

Dr. Nandi:
Those are terrific insights, Jim. Thank you so much for joining us and sharing your GI insights with our greater GI community and our patient community as well. For ReachMD, I'm Dr. Neil Nandi. To access this episode and others from *GI Insights*, please visit ReachMD.com/GIInsights, where you can Be Part of the Knowledge. As always, thanks for listening.

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