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ReachMD

www.reachmd.com
info@reachmd.com
(866) 423-7849

Examining Peptide-Based Nutrition for GI-Compromised Patients

Announcer:

You're listening to *Clinician's Roundtable* on ReachMD. This episode is sponsored by Nestlé Health Science, makers of Peptamen®. Here's your host, Dr. Charles Turck.

Dr. Turck:

Welcome to *Clinician's Roundtable* on ReachMD. I'm Dr. Charles Turck, and joining me to examine peptide-based nutrition for patients with compromised gastrointestinal function is Dr. Osman Mohamed Elfadil. Dr. Elfadil is a Senior Research Fellow in the Division of Endocrinology, Diabetes, Metabolism, and Nutrition at the Mayo Clinic in Rochester, Minnesota, and has a special research interest in peptide-based diets. Dr. Elfadil, thanks for being here today.

Dr. Elfadil:

Thank you, Dr. Turck. Thank you for having me.

Dr. Turck:

So if we start with some background, Dr. Elfadil, would you tell us how food allergies and malabsorptive conditions may impact patients?

Dr. Elfadil:

Malabsorptive conditions essentially limit the absorption of macro- and micro-nutrients, in other words, limit the benefit of food that we consume. But let me expand this a little bit to share with you some other disease processes that we think causes GI intolerance and impact patients. We have looked into our prospectively maintained large data set including more than 1,500 patients trying to figure out what are the disease processes for patients receiving enteral nutrition care in our program, and we are able to identify a number of GI-compromising conditions. In fact, in our center, 3 in 5 patients receiving enteral nutrition have cancer, including GI cancers, but we're also able to identify other GI-compromising conditions like liver or pancreatic diseases, mucosal diseases, gastrointestinal dysmotility, bowel obstruction, eating disorders, and short bowel syndrome.

Dr. Turck:

And how do we currently approach providing nutritional care for these GI-compromised patients?

Dr. Elfadil:

This is a great question. I always remember what I was told by my mentors: to consider using the gut as far as it still can be used, and this, for a number of reasons, includes physiological/immunological benefits for continuing to use their gut. We know using the gut will improve microbiome and has benefits to gut integrity, as well as a cost benefit when we compare the cost of tube feeding to parenteral nutrition, for example. However, how we approach providing nutrition care in our center is we typically sit with patients and discuss options we have, including plan of management and the need for nutrition therapy support. For example, if we need tube feeding, we'll be talking to patients about the placement of the tube, and in our practice, feeding tubes are placed by different services, including intervention radiology, gastroenterology, as well as surgery. Then, the next step will be to discuss the choice for the enteral formula. The last piece of discussion we'll have with patients is providing them with needed education about the nutrition therapy they are receiving, the regimen that will be prescribed to them, and essentially what symptoms to look for and how to report back to us.

Dr. Turck:

So if we zero in on peptide-based formulations in nutritional care, how do they work to improve GI tolerance?

Dr. Elfadil:

I will just mention two major differences between peptide-based formulations and standard formulas. One is that peptide-based contain mostly oligopeptides in the form of di- and tripeptides versus intact proteins in the form of polypeptides typically found in standard formulas. The other major difference is the fat content of both formulas. In peptide-based formulas, we have more of medium-chain triglycerides, while we have more of long-chain triglycerides in the standard formulas. These two differences are actually key for why we think peptide-based formulas are better tolerated because we know oligopeptides are more easily and rapidly acidly digested as well as medium-chain triglycerides are easily and rapidly digested because they don't necessary need the complex lipolysis processes that's required to digest long-chain triglycerides.

Dr. Turck:

Now as a follow-up to that, which of our patients might benefit from peptide-based formulations?

Dr. Elfadil:

Well, I think every patient who was intolerant to a standard formula may benefit from a trial of peptide-based formulas. We have learned from different research and data published that peptide-based formulations are used in different settings, including critical care, inpatient at-home settings, and we also know that these formulas were used in a wide range of age groups – in pediatrics as well as adults. So any patient who's intolerant to standard formulas may benefit from transitioning to these peptide formulations, but then the question will be whether we know some groups who have higher incidence of enteral feeding intolerance, and in one of our recent projects, we were able to look at large pool of enteral nutrition recipients, including around 1,600 patients, and we noted that patients with gastrointestinal dysmotility as well as patients with neurodegenerative diseases have significantly higher incidence of enteral feeding intolerance. We also noted that in patients that require enter a nutrition therapy after bariatric surgery, at least 1 in 3 of them will struggle with tolerating enteral nutrition when required. So I find it useful to also have an idea of who may actually develop enteral nutrition intolerance, but as a general concept, everyone who's intolerant may benefit from peptide-based formulations.

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. Osman Mohamed Elfadil about peptide-based formulations in patients with compromised gastrointestinal function.

So, Dr. Elfadil, let's switch gears here a bit and take a look at some of the latest data on peptide-based nutrition. What could you tell us about recent key findings from clinical trials?

Dr. Elfadil:

Absolutely, and unfortunately we don't have too many randomized control trials when it comes to peptide-based formulations, but we have number of retrospective reviews that I would like to break down into three major categories. A is inpatient critical care, B is home enteral nutrition, and then C is a special concern about the cost of peptide-based formulation and how that was looked at and evaluated in studies. So in terms of inpatient critical care settings, we have number of reviews that have looked at patients with different conditions, including post-major abdomen surgery, pancreatitis, acute GI injury, as well as HIV-related malnutrition, and in all these reviews, peptide-based formulas were better tolerated and helped achieve favorable nutrition outcomes.

In terms of home enteral nutrition, our group has done a number of studies looking at different populations, including adults as well as children, receiving enteral nutrition, and we noted that with transition to peptide-based formula in those who are intolerant to standard formulas, there was significant reduction in enteral feeding intolerance symptoms. But what I find more fascinating that we also noted that the transition to peptide-based formulas was actually associated with significant reduction in health care utilization, things like number of phone calls patients will make to report adverse symptoms or extra visits to their providers, as well as visits to the emergency department. And we think this significant reduction in health care utilization can be transferred into reduction in cost.

The last set of data that I will highlight is the research that's conducted to examine the formula cost because cost has been always a concern with peptide-based formulations being more expensive than standard formulas, and we know from some studies based on insurance claims that overall, the use of peptide-based formulas in those who are intolerant of enteral feeding is actually cost effective. One cost consequence model actually suggested that if we are able to reduce enteral feeding intolerance by 7 percent of what we have now in critical care settings, that will lead to overall reduction in cost that will make this approach cost effective.

Dr. Turck:

And before we close, I'd like to see if you had any final comments you'd like to leave with our audience today.

Dr. Elfadil:

My takeaway message will be that enteral feeding intolerance is not uncommon. We do see it as a challenge. We don't know the best approach to address it, but we have growing data that suggest that the use of peptide-based formulations may be of help.

Dr. Turck:

Well as we come to a close, I want to thank my guest, Dr. Osman Mohamed Elfadil, for joining me to discuss the role of peptide-based nutrition in GI-compromised patient populations. Dr. Elfadil, it was great having you on the program.

Dr. Elfadil:

Thank you for having me.

Announcer:

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