

DIABETES SPECIFIC FORMULAS RICH IN MONOUNSATURATED FATTY ACIDS & METABOLIC OUTCOMES IN PATIENTS WITH DIABETES OR HYPERGLYCEMIA

A SYSTEMATIC REVIEW & META-ANALYSIS

Featuring :: **Maria Camprubi, PhD**

TRANSCRIPT

Maura: Diabetes is a chronic disease that has a profound impact on people's lives around the world. It's estimated that by 2030, 522 million people will be living with the disease.

Maura: If you're a health care practitioner who routinely helps patients to address pre- type-1 and type-2 diabetes or stress-induced hyperglycemia, you already know how much patients can struggle with managing their condition and often their blood glucose. You also know there's an encouraging amount of research in play today to help uncover interventions that can help make that struggle a little easier for the patient and the health care team.

Maura: I'm Maura Bowen, podcasting for the Abbott Nutrition Health Institute. I'm here today with Maria Camprubi, PhD, a Senior Scientist at Abbott Nutrition. Dr Camprubi has joined our podcast to discuss and compare the metabolic outcomes of diabetes-specific formulas that are high in monounsaturated fatty acids, vs. standard formulas in adult patients with type 1 and type 2 diabetes, or stress-induced hyperglycemia. She and a team of her colleagues just published a paper about this topic in the March 2020 issue of Clinical Nutrition.

Maura: Dr Camprubi, before we start, can you tell us a little bit about yourself, your current role, and what brought you to this area of focus in your career?

Dr Camprubi: Yes, absolutely. Currently, I work as a senior scientist in the Nutrition Science team at Abbott Nutrition supporting our main adult nutritional brands in Europe, Middle East and Africa. So, basically, what I do is supporting and promoting the scientific evidence that is behind our nutritional formulas, including diabetes specific formulas, to help patients to live their best life. I am a Biologist and have a PhD in molecular and cellular biology. I joined Abbott already 7 years ago and I must say, I am continuously studying and learning so much about how optimal nutrition can really make a difference and having a real impact on our patients' disease conditions and more importantly, in their quality of life.

Maura: Before you and your co-authors conducted your meta-analysis and systematic review on this topic, what had been some of the accepted evidence on therapeutic formulas for people with diabetes?

Dr Camprubi: Use of enteral nutrition for patients with diabetes or hyperglycaemia is very common in different clinical settings. We know that diabetes specific formulas administered as oral nutritional supplements have been associated with positive health outcomes in patients with diabetes such as improved nutritional status and better

glycemic control in different clinical settings. Several original studies have demonstrated that enteral nutritional support and diabetes specific formulas can improve short- and long-term metabolic control. They have also demonstrated that the use of diabetes specific formulas is cost-effective. Therefore, we do have lot of evidence, but as you may know systematic-review and meta-analysis is the highest level of scientific evidence, as it compiles all current published evidence to find a statistical difference.

Maura: Can you tell us what prompted your meta-analysis and systematic review?

Dr Camprubi: It was the fact that since the last meta-analysis published by Marinos Elia et al in 2005 in Diabetes Care, there had been many studies using diabetes specific formulas revealing very promising results in patients with diabetes. So, we realized that these findings had not been included in systematic reviews or even meta-analyzed to provide the highest level of evidence. We also realized that newer diabetes specific formulas lean towards to have more fat (like monounsaturated fatty acids, MUFA) and less carbohydrates, and we knew that MUFA play a key role in supporting glucose control. Therefore, we felt the need to fill in this gap and provide the scientific community with this valuable evidence.

Maura: What did you expect to find in the data?

Dr Camprubi: Our hypothesis was that high monounsaturated fatty acids (MUFA) diabetes specific formulas, defined as those providing more than 20% of total energy from MUFA, and as compared to standard formulas could benefit more in terms of better glycemic control and lipid metabolism. So, actually, what we expected was to observe first: a positive effect by using these formulas and then, a superiority versus standard formulas not containing such a level of MUFA. We know very well that MUFA are important macronutrients to complement the goal of diabetes medications, especially by increasing insulin secretion. Then, this was our primary hypothesis.

Maura: What did the data actually show?

Dr Camprubi: Our data clearly showed a significant superior effect of high MUFA diabetes specific formulas (compared to standard ones) on different metabolic outcomes in diabetic patients. In particular, it demonstrated that high MUFA diabetes specific formulas can provide statistically different clinical benefits in terms of reducing glycemic response, glycemic variability, and promoting a better lipid metabolism.

Maura: Did anything surprise you about these findings?

Dr Camprubi: What surprised us the most was the high number of studies that we found that met our inclusion criteria and we were able to include in the quantitative analysis. That was actually an important strength of this publication. We finally included a total of 18 randomized control trials which involved a total of 845 adults. Some authors concluded that reducing glycemic variability is an important health outcome in hospitalised non-critical and critical patients particularly in those with stress hyperglycaemia. We found an important effect size favouring the use of the diabetes-specific formulas in diabetes patients for this outcome. To our knowledge, no other meta-analysis has reported these findings before.

Maura: Bringing it all home, what learnings from this review can or should clinicians apply to their practice?

Dr Camprubi: Metabolic control by using enteral nutrition in patients with diabetes or stress-induced hyperglycaemia can be complex in clinical practice due to multiple reasons. In addition, there is a wide range of different types of diabetes-specific formulas currently existing on the market with a markedly variable composition in macro- and micronutrients. I hope this will help clinicians to select the best nutritional support for their diabetic patients. I do believe that, this publication will help to guide clinicians in the use of the best/ideal diabetes specific formulas in patients with diabetes

Maura: What makes you feel hopeful about your team's findings?

Dr Camprubi: I do believe this publication represents a significant step in the way to find the ideal composition of a diabetes specific formula in terms of optimal amount of MUFA and maybe other ingredients. We were not able to identify a specific amount of MUFA associated with healthy benefits, due to high variability in the composition of formulas used, but at least we found that those providing more than 20% of energy from MUFA were superior to standard ones.

Maura: Can you think of any additional research that should be done that could be helpful in this space?

Dr Camprubi: We only focused on fats, but CHOs are really important macronutrients (in terms of type and amount) to manage blood glucose levels, so they are also contributing. Moreover, we really need data on different outcomes such as quality of life, risk of complications, effect on blood pressure, and other comorbidities associated with diabetes... Diabetes specific formulas have a tremendous power to manage diabetes condition.

Maura: Dr Camprubi, thank you so much for your time today. I hope you'll join us again with future updates on your research.